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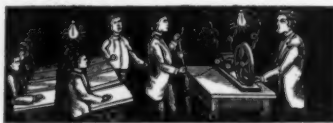
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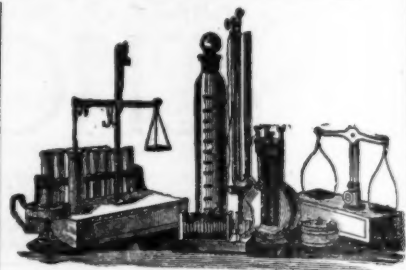


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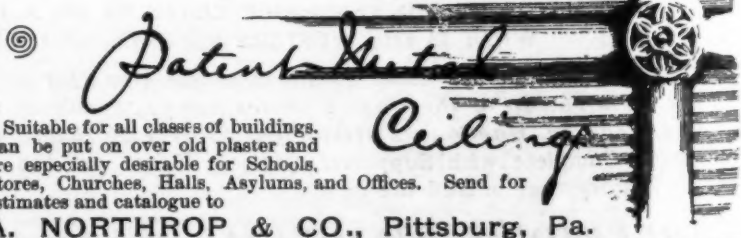
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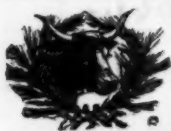
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THE SCHOOL JOURNAL

A Weekly Journal of Education.

Vol. XLIII.

For the Week Ending December 26.

No 24

AMOS M. KELLOGG, { EDITORS.
JEROME ALLEN, }

The business department of THE JOURNAL is on page 542.

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A Happy New Year.



HIS wish will go around the Christian world with more meaning and earnestness as the years roll on. It is more than a mere form; it is in another shape the utterance of the song of the angels: Peace, Peace on Earth, Good Will to Men. The true aim of education, invention, civilization, culture, is the happiness of mankind; especially is it the end of education. The teacher may simply propose to impart a knowledge of figures and letters, but a divine purpose will employ them to great ends. Let us encourage the relation of the wish for "A Happy New Year." If we do not take happiness into account in our educational processes we are making a great mistake. Let the teacher make happiness an end in his daily work. Let the thought be that this drudgery aims to make the child into the image of his Creator, and cause him to follow Him who not only made trees that bear fruit but trees that are clothed in beauty. So may the teacher impart both knowledge and happiness.

In the year 1892 there is one date that should not be lost sight of. It is one of peculiar interest to school teachers. March 28, 1592 (300 years ago next March,) there was born in Moravia, a man who spent his life in working to improve the condition of schools, and who, did a wonderful work as an educational reformer—more to elevate education than is easily told. This was John Amos Comenius. His first work was a method of teaching languages, in a much shorter time and in a more pleasant manner than the old method. This little book attracted the attention of the educated world, and was translated into fourteen different languages. He wrote a number of works on education, among them the first illustrated school-book ever published.

The English parliament invited him to London to confer with him in regard to a universal college which he proposed. Unfortunately the Civil war broke out in England just then, and nothing further was done concerning the college. He was then invited to Sweden to confer concerning education with Oxenstiern. He was called to reform the schools in Hungary, and he was invited also to visit France. His ideas attracted the attention of the leading governments of Europe. Many of the reforms he introduced into schools remain to this day.

The probability is that many school teachers in America will call attention to this anniversary. It will be the

first attempt to do tardy justice to greatness among teachers.

A most important educational meeting having for its object the advancement of the Pedagogical School of the New York University, will be held in Madison Square Garden assembly rooms, on next Tuesday afternoon, December 29, at two o'clock, under the management of the Women's Advisory Committee of the university. Two of the most eminent educational men in the United States will deliver addresses. The first will be by Dr. G. Stanley Hall, president of Clark university, and the second General Francis A. Walker, president of the Massachusetts Institute of Technology. The subject of Dr. Hall's address will be "The Professional Training of Teachers," concerning which more thought has been given during the past few years than to any other educational topic. No man in this country, perhaps in the world, is better qualified to direct pedagogical thought than Dr. Hall. His college training was supplemented by many years of study in Europe, during which time he became thoroughly familiar with all continental methods of teaching. His principal work since his return has been in Johns Hopkins university, as professor of psychology and pedagogy, and more recently as organizer and president of the new school of which he has charge. His address will be of special interest to all who are desirous of securing a higher grade of teaching. General Walker's well known practical success and executive ability, as well as his knowledge of men and things in the political world, will give great weight to what he may say. Altogether, this meeting will be one of the most important educational gatherings that New York has had for many years.

The teacher must have a large freedom. Let us illustrate. The Art Students' League offered lately a prize of several years' residence in France, to the one who should show the most promising work. It asked for paintings, giving a certain amount of time. It did not say these should be done with so much green paint, so much red paint, etc. Now it would seem that the teacher should be left free to work out his ideals. There should be a general course of study, but it should not be demanded that all pupils of a certain grade in the city do just the same thing; with just the same agility, for example, adding a column of ten figures. It may be said, this will demand better teachers than are now employed.

It is not a wise plan to have too much "Don't" in your school. There is something about the word that arouses all the antagonism in child nature. What he would not think of doing otherwise, he is irresistibly impelled to do when the "don't" strikes his eye or ear. It is necessary, of course, that some things should be absolutely forbidden, but the sparing use of the contraction is most considered by the best teachers.

State Superintendent Draper.

The result of the recent election in New York state makes it possible that the incoming legislature may be Democratic on joint ballot; in that case, a change will probably be made in the office of superintendent of public instruction, which has been filled for the past six years by Andrew S. Draper. Should this result follow, it will be cause for sincere regret on the part of all who have watched with such deep interest the grand work which has been done in the Empire state, along educational lines, during his administration. He originated and perfected a system of uniform examinations for teachers which has greatly raised the standard preparatory for school work. Under this system, of the eighty thousand candidates examined in four years, twenty thousand were denied licenses to teach. Under the old system it would have been possible for each one of these twenty thousand to have secured a certificate, and by underbidding qualified teachers, to have found places in our public schools; unqualified persons cannot now teach at the expense of the state. This system makes it possible for teachers to feel that there is a reward for thorough preparation. Thus the ambition of thousands of young men and women has been aroused to fit themselves adequately to become teachers. It has also worked to the advantage of qualified teachers in steadily increasing the wages received; so that the common schools of New York state are doing a work they never could do before. It has been Judge Draper's personal influence (there was no definite statute), that put this system into operation in every school commissioner district; it is now as thoroughly established as any part of the school law.

He found on coming into office that training work was being done, in high schools and academies, wholly according to the notions of the instructor, and often in a desultory manner; there was a spirit of antagonism, too, between these schools and the normal schools. The work of all these schools has now been made to harmonize and articulate.

He has aimed to interest the public in improving the condition of school-houses and their surroundings. Prizes were offered for the best plans for country school-houses; the plans which were approved, have been widely published and distributed throughout the state and copies have been requested from every state and territory in the Union. Since the publication of this work, more new school-houses have been erected in this state than in the preceding generation. He has encouraged the carrying out of the law establishing Arbor Day and thus increased the interest in pleasant surroundings for the school.

He has visited nearly every county of the state once, and many of the counties more than once, at teachers' institutes, where he has addressed the teachers, encouraging a higher style of school work. He has also attended every state educational gathering during his two terms, and the addresses made on these occasions together form a volume which stamps Judge Draper as one of the foremost educational thinkers of our time. They are worthy to be placed by the side of the writings of Horace Mann, or other great educational workers of the century. His evident deep interest in educational progress has brought him invitations to address educational associations in nearly half of the states of the Union.

He has been found too at the national educational coun-

cils. At the Nashville and Toronto meetings he did credit to himself and his state. For two years he was president of the National Department of Superintendence; the New York City and Philadelphia meetings, held under his administration, will be remembered as among the most profitable in its history.

When Supt. Draper came into office six years ago, he was criticized because he was a politician. Now he is regarded as a statesman who has added new glory to the common school system of New York state. His effort has been to cause these schools to be the pride of the people; he has labored to inspire all with whom he has come in contact with the desire to make the schools better. In this effort he has aroused a great army of enthusiastic followers.

It will be a misfortune if a simple turn of the political wheel shall now put an end to a further development of the work which he has so well begun. Is it not possible to take this office out of politics? If the Democratic party is to control the legislature which meets in January, cannot that party boldly take the position that politics shall not enter into our schools and their management, and take the necessary action to bring about such a desirable result?

Editorial Correspondence.

It was a source of unusual satisfaction to me that Mr. Drexel proposed to found an institution in Philadelphia on the lines of the New Education. The dedication took place on the 17th. Hon. Henry Barnard, Pierpont Morgan, Samuel D. Babcock, Chauncey M. Depew, A. S. Hewitt, Thomas A. Edison, and others were in the train. The auditorium would certainly contain 2,000 persons, and it was full. The address by Hon. Chauncey M. Depew was a very forcible one; he presented the general argument that an enlargement of the ordinary curriculum was demanded on account of the competitions of modern life. The recent death of Mr. Drexel's wife prevented her handing over the deeds of the property in person; that was done by Hon. Wayne MacVeagh. He stated the value of the lot and building to be over \$500,000; and the value of the endowments were over one million more. The address of Pres. MacAlister on receiving the deeds on behalf of the trustees was short. He said the problem before them was a new one and the utmost good judgment would be required in its solution. At the conclusion of the exercises the building was thrown open for examination. It is three stories in height; there is a large central hall (probably 50x50) with galleries opening into class rooms. There is a fine library room and a beginning made of a collection of books. There is to be a moderate charge for tuition. Ex-President Shepard, of the board of education, was present. To him this building is really due, for he persistently strove to have a New Education man selected for the first superintendent of schools in Philadelphia. His first choice was Colonel Parker, but the colonel preferred normal school work and went to Chicago. Then Supt. MacAlister was chosen. Now, had the latter run in the old tracks, saying, "Let well enough alone" (a very convenient maxim for those who are ignorant of what should be done, as well as for those who are afraid to move into new fields of thought) this movement would not have been made by Mr. Drexel. It was his comprehension of the efforts of Supt. MacAlister to reform

the public school system that led him to feel the need of such an institute. And further, having decided to found such an institute the direction fell naturally into Supt. McAlister's hands; for the number who can carry on a full-fledged manual training school is exceedingly small. It is understood the salary is to be \$10,000. Many a man who makes a good college president will look longingly at the handsome sum to be paid to the head of Drexel institute; but the one who really earns it will have to understand a good deal beside Latin and Greek. The great requirement will be a *profound knowledge of education*. This is a subject but little studied in the colleges, so that the man who aims to fit himself to stand at the head of an institute at all like Drexel institute must go at it alone. This might lead to some reflections as to the grand opportunities superintendents of schools have to study education, and the little use they make of them because they see no use for doing it. Supt. MacAlister took a different course, when in Milwaukee, and he stands at the head of this noble institute as a reward.

In the evening there was a gathering to witness some most interesting exercises at the Academy of Music; it was the occasion of the graduating exercises of Pierce's Business College. It was difficult to see a vacant chair. The class numbered 128; 29 women and 99 men. The address was an exceedingly bright one by Andrew Carnegie. He gave bits from his own experience that received great applause. There were other speakers, but Mr. Carnegie was the star because every young man was saying, "He was once as poor or poorer than I." Prof. Pierce resembles Prof. Packard of New York in this, that his graduating exercises are always affairs of moment. They are not done in a corner; the best men are there to give the boys and girls a send off.

A. M. K.

The Spirit of Primary Work.

By ANNA B. BADLAM, Principal of Training School, Lewiston, Maine.

Slowly, but surely, the beautiful simplicity and sympathy of Fröbel's teaching have spread their influence over our land until, not only the kindergartens, but some of the lower grades of primaries are bringing forth "the fruits of the spirit" in the teaching done in them.

In the kindergarten proper the thought, "A little child shall lead them," comes forcibly to mind as we watch the ever sympathetic teacher with ready tact turning with untiring zeal into new lines of thought that the active imaginations her young charges suggest, and with eager enthusiasm responding to their spirit of inquiry and invention, which would fain lead them into unexplored fields, thus becoming their companion and friend, as well as watchful guide in their quest for knowledge.

I wonder if the tender calmness and serenity of most of the faces of those who are engaged in kindergarten work have ever impressed you as they have me? I have yet to find the kindergarten teacher who, thoroughly in earnest in her work and realizing its responsibility and nobility, does not have the spirit which pervades her intercourse with the little ones shining forth from her sunny eyes, and manifesting itself in the tender curves of her sympathetic, expressive face.

I have yet to find one of whom it could not be said, "Her face has a wonderful fascination in it. It is such a calm, quiet face, with the light of the rising soul shining so peacefully through it."

Can this be due to the study and knowledge of child-life which is the necessary foundation for the success of the kindergartner? If it is, then let us be humble students of Fröbel and his followers; for, far too often many of us lack the quick sympathy, the ready tact, the tender love, that can spring forth only after a close communion with and a real study and knowledge of childhood.

The latent spirit of motherhood, which God has implanted, like the germ of a plant divine, in every true woman's heart, lies dormant with some of us too

often, I fear, instead of blossoming into the all-pervading spirit of universal motherhood, which is no more than that love of humanity, which would fain reach every little human soul, no matter how uninteresting, how ungraceful the form that covers it.

Too often, we forget, in the hurry and drive of daily programs and courses of study, the words of the Divine Teacher, "Inasmuch as ye have done it unto one of these little ones;" too often forget that love and sympathy were the spirit of this teaching.

There is too much of the *subject-in-hand* in our intercourse with the little ones; too little of the *spirit*, the soul of our womanhood, that should radiate its light to brighten their hearts and minds.

Love and sympathy belong to childhood as its *rights*; they should be held as sacred *demands* on the highest and best of our woman's nature in our positions as teachers.

Picture the position of the little child as it enters for the first time the school-room, which is to introduce it into a new life with all its untried conditions and environments; try to get some conception of the mingled feelings of curiosity, timidity, shyness, yea, forlornness that must sweep over its little soul as the familiar face and form of its mother disappears, and the child finds itself only among many and at the untried mercies of an utter stranger. Ought not this very helplessness to appeal to all that is tender and womanly in us? And if it appeal in vain; if these little, restless bodies, these sensitive, little hearts arouse no feeling within us, save an interest in them, as so many human machines to be put into running order to turn off a certain amount of work in a specified time, then the school-room is not the place for us, unless we wish to pose as keepers of a child's prison. I speak strongly, for I believe the moral hurt to the sensitive, responsive child-nature, that is fed upon the husks instead of upon the germ of love and sympathy in the school-room, can never be estimated, much less be repaired. Then let us each "cuddle" the homesick, encourage the timid, gently soothe the frightened, amuse the restless, gently but firmly control the mischievous ones; in short, let us each strive to be like a "Heart-mother," as the Germans would say, with our little flock, trusting that the love and sympathy that lead us to understand each little one will point out the way to instruct it.

Iron-Clad Programs.

By E. D. K.

It is an excellent thing to have a program and have it written upon the blackboard and to follow it; still it is not to be iron-clad.

There will be mornings by and by when the teacher will pass a miracle of winter beauty on her way to school, if she will "look up and not down." Every twig of the leafless trees will be sheathed in a snowy ice covering by the night fairies, and the morning sun will revel in revealing the rainbow hues imprisoned in the transparent frost work. It will all be so short-lived—this marvel of beauty—that it will seem wrong to go inside the school-room. But school bells are merciless and nine o'clock brings the little folks all together, and the door is shut.

The program says "Opening exercises, 9-9.15," and the next thing perhaps is the "sponge wetting" and the "slate cleaning." What shall be done? Go on as usual? Never! That program may be the best thing seven mornings out of eight; but *this is the eighth morning*. No devotional exercises ever dreamed of can do for those children what *may* be done for them, if the teacher knows *what* to do and what to say about that dissolving beauty outside.

The artistic, ethical lesson of the sparkling crystals lovingly encircling the sleeping life within, may not be presented through nature's handiwork again during the entire season. Slates and sponges can wait.

Iron-clad rules concerning tardiness often work a

wrong that never can be righted. "Why are you late this morning?" "I had to go to the drug store; my little brother is sick." The rigid regulation for tardiness (if the case is truthful) has no place here. A sympathetic touch on the head of the late comer as she passes to her seat will show to the observant school, that a sense of fairness lies behind the strictest rule.

Did any primary teacher (in second or third year) let the recent death of Dom Pedro go by unnoticed because it might interfere with the time of a number lesson or a writing exercise? What! Dom Pedro in a primary room! Why not? The pathetic story of the old emperor, dying away from the home from which he was expelled, and yet *guarding that little bag of Brazilian soil* to the last was a rare opportunity to teach the love of country.

Was there no time in the imperative demand of program routine to speak of Whittier's birthday this week? It is something to be always remembered by these children that they lived in the sunset of Whittier's life? Shall they not get a glimpse of the quiet, golden tints before it is too late?

While the work of the schools must be systematically carried forward, the children who make up these schools are not created for the sole purpose of carrying out a program; they are there to be trained to be men and women and not to be dwarfed, narrowed, and bent to fit an iron-bound routine.

The Kindergarten.

By ELNORA D. CUDDEBACK, Principal Training Department, Alma College, Mich.

The kindergarten, or child garden, is not a child's garden in the ordinary sense, although in all well regulated kindergartens such gardens are important factors, but a garden of children as we might say a garden of celery, a garden of lilies, or a garden of roses—a place where children, the most wonderful things that live and grow upon the earth, are cultivated, cared for, protected, guided by a thoughtful gardener—the kindergartner.

The kindergarten is the place where children can expand and grow, drink in sunshine, and become beautiful as plants do in a garden. They are treated as beings endowed with faculties that must *develop* according to nature's laws, that must not be forced in one way or cramped in another, but be placed in the most favorable circumstances to attain their full development in accordance with the Creator's laws governing child development, as plants do in soil, climate, conditions, adapted to their needs.

The gardener puts each plant in that part of the garden where the sunshine, soil, moisture, exposure, are

BEST SUITED TO ITS GROWTH,

to the attainment of its greatest perfection—the strong sunflower in the sun, the delicate vine, where it may be supported and shaded by the small trees, and the moss in the cool shade of the larger trees by the brook.

So in the kindergarten the kindergartner, studies the needs of each child as a gardener does each plant and thus provides for the individual needs of each.

Fröbel gives the purpose of the kindergarten—"To take the oversight of children before they are ready for school life, to exert an influence over their whole being in correspondence with its nature; to strengthen their bodily powers; to exercise their senses; to employ the awakening mind; to make them thoroughly acquainted with the world of nature and of man; to guide their heart and soul in the right direction; and to lead them to the Origin of all life and to union with Him."

To facilitate in reaching these results, Fröbel devised a chain of twenty objects and a series of songs and games to be directed by one who has been thoroughly trained in the needs of little children and the means of meeting these needs.

Each gift and each occupation is so devised that it is a trinity, *i. e.*, it possesses elements in the nature of its

use which are physical, mental, and moral, and thus in a natural way develop the

TRIUNE NATURE OF THE CHILD.

The gifts represent material for play, that is, after the child is through with his play or lesson the material of the gift returns to its original form.

All along the line of gifts geometry, arithmetic, and language ideas are simultaneously developed in the minds of the pupils.

As the gifts have given material for the child's investigation, for his experiment; the occupations give material for his creations, for the reproduction of ideas received through the gifts, for the natural development of the senses, and for the technical training of the hand.

Each of these—perforating, sewing, drawing, pasting, crayoning, cutting, weaving, paper-folding, peas work, modeling—has a definite part to perform in the drawing out of the capabilities of the child.

The occupations make work attractive, and lead the child to love work for work's sake, to desire to excel in handicraft.

They make the eye actuate to observation, the ear sensitive to sound, the hand flexible and dextrous. The work is so devised that every muscle of the hand and fingers is developed by exercise and made subservient to the will. The

IMPORTANCE OF THIS TRAINING

cannot be over-estimated. The child after such training will readily distinguish forms and associate them with ideas, and therefore with little effort will learn to read.

As regards arithmetic the only new thing for the kindergarten trained pupil to learn, is the method of written solution, of working a sum on the slate or paper. He is perfectly familiar with numbers and used to deal with them in all his work.

In connection with the occupations children are taught much of science—the growth of plants—the formation of crystals—the life development and habits of insects, the habits and uses of birds and beasts.

They are given many choice stories from flower land, from physical and political geography, from the phenomena of nature, from home and foreign history.

And therefore as regards elementary knowledge they learn as much, if not more, than children do in a like period in an ordinary school, while besides this they possess a skilled eye, ear, and hand, and the *power* to use them; are filled with a love for work, a desire for knowledge; are graceful, polite, self-dependent, thoughtful; possess a quick intellect and a keen moral sense.

Throughout all the occupations, and especially through the games, the child is

LED TO RECOGNIZE THE RIGHT

to be kind to his neighbor, and to glorify God in all his work.

Another practical value of this training must not be overlooked, and that is the advantage it gives to that larger proportion of our populace that must eventually learn a trade, or fill a position as clerk or general manager in some establishment.

Boys and girls who leave our schools to-day to be apprenticed to a trade, or seek to enter upon the battle for a livelihood, go to the work with eye, ear, and hand uncultivated; the mind is not accustomed to give careful attention to work, the eye is unobservant, the ear dull, the fingers all thumbs—clumsy.

Before any progress can be made in work, the vision must be made acute, accurate in observation, the ear cultivated, the hand educated, thus losing much valuable time before even the elements of an industry can be mastered.

Verily the "kindergarten is the right and true vestibule of the school;" the vestibule of the industrial world, of the church. It prepares the child for all he is to learn, for all he is to do in these spheres, provides the groundwork for the full cultivation of all faculties and powers—physical, mental, and moral.

PRIMARY METHODS

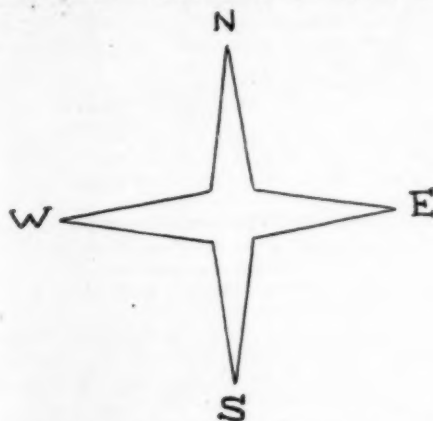
Primary Geography.

(THIRD YEAR.)

By SARAH E. SCALES, Lowell, Mass.

Object of exercise. To teach cardinal and semi-cardinal points and apply to weather, or season, observations.

Test children to see if perfectly familiar with right and left. Raise your right hand. Raise your left hand. Place right hand on head. Place left hand on shoulder. Close your right eye. Show me your left foot. Show me the right of your desk. Show



me the left of your desk. Stand right side of desk. Face the left of your desk. Snap the fingers of your left hand. Place your left hand in your right, quietly.

When the children seem ready with these, call four to the front of the room, placing them in the form of a weather vane by asking them to stand to the right or left of one another. Then ask them to move in different directions, to their right, to your left, and show need of names different from these, by the confusion which will arise. Send them to their seats, and ask the children to point out to you, where they see the sun when they enter school in the morning.

When found, tell school to rise and with right arm outstretched point to this place. Ask them what to call it. If not known, tell them *East*. Then have exercises to fix this point.

Send children to stand in east part of the room, to write east on the board, to step toward the east, etc. Next ask children to stand, and in the same manner, point to the east. Tell them to keep the same position, and raise left arm and hand and point. Ask if any know that point; if not tell them, *West*.

Next stand in same position, indicating east and west. Tell them to look directly before them, and see if any can give name. If not, give *North*. Ask them to imagine they have eyes in back of head, in what direction would they be looking? *South*. Make up exercises on these four points, as:

Who will go to the west of the room? to the north? south? Place your slate on that part of the desk nearest the south, etc. "Mary, come on the floor, and take ten steps in any direction."

"What direction did you choose?"

Send children to different parts of the room and ask them what they did.

Invent all kinds of exercises in direction of cardinal points, and show need of more than these four points.

Draw out and develop semi-cardinal points, N. E., S. E., N. W., S. W.

A similar exercise on these may be given. Have these performed readily without the least hesitation. Have them drawn on slates, the lines denoting the directions. Have cardinal and semi-cardinal points.

Give children tooth-picks and pins, and let them construct vane in school-room. Let them make larger ones at home and bring in. Fasten these up somewhere, and let children change arrow denoting prevailing winds daily. After lesson on weather, make observation about winds.

At first to intensify, the letters N. E., S. W., may be made on the board, and afterward erased.

Let the children take journeys in the room, as teacher indicates direction, or makes the journey; children observe and tell which way was taken.

All this depends on the enthusiasm of the teacher. Make it bright, and interesting. Example of an imaginary journey outside school grounds: "I wish to go to the south two streets, then one street or block to the east, two streets to the north, and one street to the west. Where shall I be, and in what direction shall I take to return to school?" Teacher may draw plan on board of this journey, paying no attention to scale, simply for direction.

Apply knowledge gained to season lessons, weather observations, etc.

Ask questions daily as to direction of wind, and have weather vane adjusted to correspond. Note changes in the sun shining into the room, and kindred topics.

Color Lessons. II.

By FANNIE A. STEBBINS, Training School, Springfield, Mass.

You may tell me what we saw yesterday in our color lessons, May. You may tell me what colors we saw in the spectrum, Ned. Who have seen other things that are of any one of these colors?

"A carrot is orange." "This leaf is green."

Show me the part of the spectrum that is like your leaf. "That's too much like the yellow for green. I think this part is green."

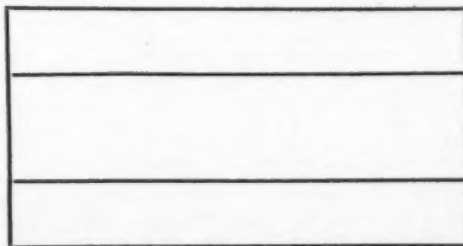
That is right. Who can find something like this? (Pointing to blue in the spectrum.) "The ——— Avenue cars are that color."

That is blue. This card is blue. "Annie says Clara's eyes are blue, but they're not like that." "They are lighter blue." "I have found a blue circle." "I have found a blue square."

I wonder who has seen a flower of this color (violet). Yes, and we call the flower by the same name as the color—"violet."

Now you may take the little envelopes that are on your desks. Take the pieces of colored paper from them. (These are the sets for first year's work in color, containing the six standard colors and some neutrals.)* I will hold the glass in the sun again and you may place the colored papers on your desks in the same order in which you see them in the spectrum. You may name the colors in the order in which you have placed them, Robbie. You may see if Mary's are in the right order, Frankie. "Dick's row isn't right; he began at the wrong end." Can you make it right, Dick?

I have some strips of paper; who will tell me what color to call them? Yes, "gray is a good name for this color." (A good size is two inches by four inches, with a line one-half inch from either long edge, thus:)



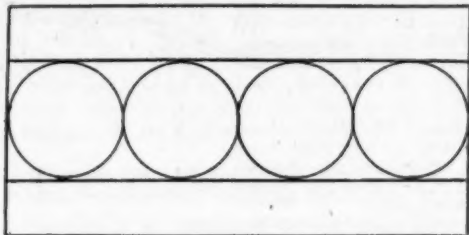
I will stick some yellow circles on this gray strip, like this. If I had a very long strip I might place it along the edge of the blackboard and then what should we call it? Where else might we use a "border"? Where else have you seen borders at home? How many have seen a border around the top of the room? "There is a border of roses around my room." "There's a border around the carpet in our parlors."

You may each have some colored circles and make a border

*The apparatus used in this lesson is gotten out by Milton Bradley Co., Springfield, Mass.

for me. Which color will you choose, Ethel? "I would like violet because that will look some like the violets." "I want green, it looks like pond lily leaves. Now each one has a strip of paper and some pretty circles. You may use your sponges to wet the back of a circle. Now lay it on the strip at one end, so that it will touch both of those lines that you see. Maggie hasn't her's quite right. Put it so, Maggie.

Take another circle, wet it, and lay it beside this first one. Oh, wet it with your sponge, Johnny. (When finished the borders should be like this.)



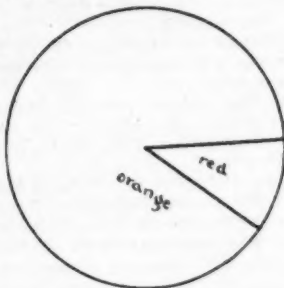
You may tell me what you have made, Tommy. "I have made a border of orange circles." "I have made a border of red circles on the gray papers." (For the remainder of this work, it is important to have a "color wheel.")

Tell me the color of this ribbon, Charlie. "I think it is red." "I don't think it is like the red in the spectrum." "I think there is a part of the spectrum that is that color." Show it to me, Walter. "It's right there." Between what colors is it? "I think it's between red and orange." What colors do you think we can mix to make this color? Which shall I use the most of, the red or the orange? I will put these two disks together so, and put them on this wheel and make them turn very rapidly. Let us see if this is right. What is the trouble, children? I will put in more red. Now what do you say? Of which color did I use the the most? How much more red than orange? Does it look more like orange or like red? What kind of red do you think we might call it, Susie? That's a good name we will call it an "orange red."

I will make a color for you, using the disks this way:

Of which is there the most? Look at the color now while the disk is whirling. "It looks a little redder than orange." What shall we call this color? Yes, we will call it "red-orange." Find the red-orange paper in your envelopes. (These children should have the papers provided for second year's work in color.*) You may find the orange-red papers.

To-morrow bring me anything that you think is either orange-red or red-orange, and we will test it to find if you are right.



Literature for Little Folks.

By HARRIET M. KEITH, New York City.

No one should be able to appreciate true poetry more than children. Instead of sing-song rhymes, treat them to a gem now and then, if only a few lines:

"Heaped in the hollows of the grove,
The withered leaves lie dead;
They rustle to the eddying gust,
And to the rabbit's tread."

Children, if you were in the country now, where would you like to take a walk?

"On the grass." "In the fields." "In the woods." Do you know another name for woods? "Forest." "Yes, and I know another name, a *grove*." "Now let us close our eyes and dream we are taking a walk in a grove of trees. It is so cool to-day, we must wear our coats. What do we see all around us? Do the trees look as they did in the warm summer time covered with fresh, green leaves? "No, they are quite bare."

And, what do we see all about us, on the ground, under the trees? "Nuts." "Leaves." And do the leaves on the ground look fresh and green? "No; they look like these that someone found in a grove the other day." How do they look? "Faded." Another word. "Withered." What has withered the poor leaves so? "Jack Frost."

And when the wind comes what does it do to the withered leaves? "It blows them about."

And do they lie scattered evenly about on the ground? "No,

the wind blows them into piles." Yes, they get into heaps and piles, just as if they were cuddling together to keep warm. Let us look and see if there are any places in the groves where the leaves may hide away from the wind.

"Behind the trees." "In holes." What could we say instead of *holes*? "Hollows."

Make a hollow with your hands, like the hollows in the groves where the leaves lie. Would you like to hear what a poet has written about our dream? Well, this is it:

"Heaped in the hollows of the grove,
The withered leaves lie dead."

You say it with me this time. (Repeat.)

Now, let us listen, and hear if the withered leaves make any noise. Do they? Yes, "they rustle." What makes them rustle so? "The wind blows them."

We can play our hands are leaves, and rub them together, making that same rustling sound. Now, if we listen again, perhaps the leaves will be very still, and then all of a sudden, they will commence to rustle again. Why is that? "Because the wind stops blowing and then, all of a sudden, it commences again." Yes, when the wind blows very hard, all of a sudden, what do we call it? "A gust of wind."

Now, you may play your hands are leaves again, and make a gust of wind blow them;—now, make the wind be still,—now another gust. Sometimes the wind will blow the leaves straight along the ground, and then again, it will blow them in a very peculiar way; did you ever notice how? "It blows them round and round." Yes, then we say the wind is *eddy*ing. I have sometimes seen the wind take up the dust too, and whirl it round and round. Show me with your hands how a gust of wind eddies. What is the wind doing? "It is eddying."

Let us walk a little further in the grove. The wind is very still just now, and yet a little way off, we can hear a faint rustling sound in the leaves; what do you suppose it can be? "A little squirrel." It might be, but if we peep through the trees, we might see a timid little animal with long ears just getting ready to take a jump. "A rabbit." If he sees us, what will he do? "Run away." Before he runs away, let us say our little verse again, and I will tell you some more:

"Heaped in the hollows of the grove,
The withered leaves lie dead;
They rustle to the eddying gust,
And to the rabbit's tread."

(The new words when once elicited from the children are used freely by the teacher in further conversation.)

Personify as much as possible. There are numberless selections from Longfellow, Bryant, Whittier, as beautiful and simple as this.)

Still Experiments.

By E. E. K.

Almost every school program, now-a-days, sets apart certain periods for language work. A good deal of the time thus devoted is rather aimlessly spent in conversations with nothing particular to talk about. Language lessons should be so conducted as to strengthen the observing faculties, train the powers of thought, and reinforce the other work of the school. Forceful preparation for conversation lessons may be provided in the shape of what I have learned to call *still experiments*. These are processes set a-going before the eyes of the children in some stray minute and watched by them in such moments from day to day until the time comes to talk about them. The familiar experiment of leaving a rib bone in vinegar until you can tie it into a knot, or an egg until you can squeeze it into a bottle, would come under this head. Let selected children plant seeds and take care of them—own them until it is seen whether they develop one seed leaf or two seed leaves. Lay seeds on a piece of mosquito net so hung over an appropriate vessel that the seeds are half submerged in water. Keep them so and watch them sprout and develop—roots and all visible. Climbing salt is another interesting subject of attention. Half fill a jar with salt and keep it covered with water. Either blue the water or use a blue glass jar. In a country school, let a boy climb a tree and squeeze a brass finger ring upon a growing nut over whose middle it just fits. Leave it there till the nut is full grown. Then have it taken down and dissected. Half fill a tumbler with soil and put in a colony of ants. Tie a scrap of gauze over the top. Sprinkle lightly from time to time to keep the soil from becoming unnaturally dry. Stray minute observance of changes in the soil made by the little builders accumulate material for a very profitable conversation, even if science is not so systematically pursued as to include this ant-study in the regular work.

The editor of the *Northwestern Teacher* very kindly says in his note asking for some extra copies of the beautiful Christmas number of THE SCHOOL JOURNAL: "It is excellent; I admire your enterprise in making so good an educational magazine. Success to you."

A. F. LUZADDER.

From Oswego Normal School.

SPECIMENS OF CHILDREN'S WORK IN PRACTICE DEPARTMENT



The Pond Snail.

I am the pond snail. I live in still clear water, in ponds or creeks. I heard a little boy telling his sister that my large parts are the shell or hard part, and the soft part.

I can tell about my shell myself. It is hard and black with brown stripes. I use it when it rains or when danger is near. The oyster, clam, and mud turtle have shells too.

My soft parts are the head, body, foot, and mantle.

My head is the foremost part of my body.

My feelers grow from the upper side of my head. They are long and black.

My eyes are in the front part of my head at the base of my feelers. They are very small and black.

My small mouth is on the upper part of my head.

My long tongue is like a file with small teeth all over it. My foot is under my body. It is used to creep with and sometimes I use it on a float.

My body is usually in the shell, and it is never wholly out of the shell because it is attached at one end.

The breathing pore is at one side of my body. I come up to the top of the water to breathe, and after I get the air in it is very hard to get out.

I am a very happy little animal to swim about all day with my playfellows.

JAMES MULDOON,
Age 10 years.



The Horsechestnut Twig.

This horsechestnut twig is small, but some are large.

This horsechestnut twig is cylindrical in shape.

The color of the stem is brown.

The stem near the top is light brown, near the bottom of the stem the color is dark brown.

The parts of the twig are the buds and stem.

The parts of the stem are the outer bark, inner bark, wood and pith.

Some of the buds are small, and some are large.

The buds are ovoidal in shape.

The color of the buds is dark brown.

The buds are dark brown. In the winter time a sticky varnish covers them.

When it rains or snows the moisture cannot get into the buds and spoil them.

The buds come in the fall.

The maple tree and the poplar tree have buds now.

NETTIE SCHENTZOW,
Age 8 years.

Frog Series.

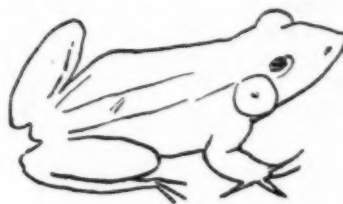
(As soon as the frogs' eggs appear in the spring they are collected, placed in glass jars, and brought into the school-rooms. The study then begins. The pupils observe the mass. The children make drawings of the eggs as they appear at this stage. As the tadpoles hatch they in turn become objects of study, and the children again make drawings in this stage of development; and so on from egg to frog the children observe, compare, express, giving oral descriptions, written descriptions, and make drawings. This study continues through a number of weeks.)

S. J. W.

THE STORY OF MY LIFE.

I was born on the 2nd. day of April. It was a beautiful day. I saw a lot of other frogs' eggs out in the water near some stones so I thought I would come out. Before I came out I was very funny. I was a black ball; by and by I was in the shape of a fish and left my covering. I had a big head and slender tail and I could swim. After which my tail grew small and then two hind legs came out I can swim faster than before: then my tail went away and now I am a frog. Now I hop around on the earth. I don't care for the water very much. When the winter comes, I will find a hole and go to sleep and when the summer comes I will come again.

—ANNA LEMON, 10 yrs.



FROM EGG TO FROG. By seventh year pupil.

Study of the Apple.

Since last May the children have had several views of the apple tree—it takes a whole year to get acquainted with the appearance of the tree—with its season aspects. During May and early June the pretty clusters of blossoms and buds were brought into the school-rooms. The unfolding buds were watched, the blossoms enjoyed, then studied. The twigs bearing the blossoms were kept in water and the changes in the blossom observed. Fresh twigs were brought in from time to time and the development from flower to fruit noticed. In October, the ripe fruit furnished helpful lessons in observation, comparison, modeling, drawing, and language.

The life-history of the apple and other fruits, as studied by the children, have furnished most interesting material for many blackboard readings. The following is one of the many such readings that have grown out of the apple study. S. J. W.

The Apple Blossom.

B Primary.

I. (JUNE.)

Good morning, apple blossom, how do you do this fine June morning?

Very well, I thank you, what would you like to have me tell you this morning?

Oh, I wish to know very much about you.

Well, ask me questions and I will tell you all I can.

Will you please tell me what the little green parts around the outside of you are called?

Those little green parts form the calyx.

What is the name of just one of those parts?

Just one of those parts is a sepal.

And what is this pretty pink and white part?

My pretty pink and white part is called the corolla, and one of the parts of the corolla is a petal.

Oh, apple blossom, what queer little things these are!

They are so long and straight and have little caps on them.

What are they?

Those are my stamens, and just see the powder I can shake from my little caps.

What are those other things that have smaller caps on them?

Those are parts of my pistil.

Thank you, apple blossom; good by.

Good by.

II. (JUNE.)

Here I am again, apple blossom; but how you have changed!

Where are your pretty white and pink petals?

Oh, they have dropped off!

But you are not as pretty as you were.

No, but I do not mind that. I shall soon be a nice large apple.

What will be your name then?

Then I shall be the fruit of the apple-tree and not a blossom of the apple tree.

So the apple is a fruit, is it?

Yes, the apple is a fruit.

III. (OCTOBER.)

On this bright October morning I shall have to say, Good morning, apple, because you are no longer a blossom.

No, I am an apple now.

What do you call your parts now?

My parts are the skin, pulp, core, and seeds.

What are you good for, apple, besides for us to eat?

Why, I cover the seeds and protect them till they are ripe.

From where did you first come?

Our family first lived in a country far, far away from here. We were taken to other countries, and finally to America.

How long have apples-trees been growing upon the earth?

For many, many years.

How old does the apple-tree live to be.

Oh, it lives to be very old. Sometimes it lives to be seventy or eighty years old.

Thank you, apple, you have told me much that I wished to know about you.

IV.

Apple, please tell me some fruit that is related to you.

Oh, yes; the pear, quince, and hawthorn are my sisters.

I am so glad you are a sister of the pear, you are both so very nice.

Is there not one name for you and your sisters?

Oh yes, we are called pomes.

Then you are a pome.

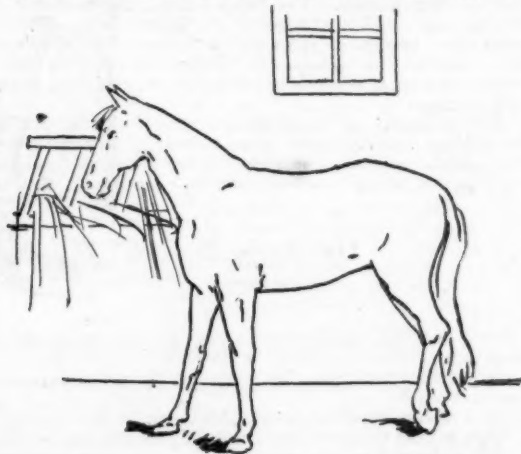
Yes, I am a pome. The pear is a pome, too.

First Steps in Reading.

By JENNIE M. SKINNER, Principal of Alden St., School, Springfield, Mass.

(As the preliminary language lesson was given by means of a picture, I show another at the beginning of this exercise, as a stepping stone to what is coming later.)

Who can tell me what this is? What makes you think it is a young horse? Where is little Polly? What has she had for break-



fast? As she does not care to stay in the stable any longer, for what is she now waiting? True; she hears her master's step outside. As she knows that soon she will be let out into the green fields, what sound does she make? Has every horse such a kind master as Polly? (Now show a perfect toy horse. I use the set of Chelsea objects.) What do you see? "Horse." Please tell me the whole story. "I see a horse."

What can a horse do? "Run." Will you please tell me so? "A horse can run." What else can a horse do? "A horse can jump." "A horse can walk." "A horse can kick." "A horse can stand." "A horse can trot." What can a horse do that is necessary for him to do, in order to live?

Susie. "A horse can eat."

Raymond. "A horse can drink."

You have told me many things that a horse can do, and yet your raised hands show me that you have thought of still more. Right; for without sleep, the horse would not care to trot very long for us; and he would be very unfortunate if he could neither see, hear, smell, nor taste.

What has the horse? Katie may tell me. "The horse has a tail." You may touch the parts as you name them.

Who can tell her what we call "the ends of the horse's feet?"

George may touch some part that Katie has not told us about.

Do all horses have saddles and bridles? For what then, would

you think that this horse is used? Who can show me the stirrups? Could he ride horse-back very well without the reins? Don't you think it would hurt the horse to guide him by his mane?

Of what use is the forelock?

Do all horses have "four legs and four feet"? We all agree with Sadie that "the horse has a pretty brown mane on the side of his neck;" now tell me about the parts of his head? Very well done, Sadie. We will have to watch a horse, some day, and see how he uses all these parts.

If you had a horse, what would you do, Rufus? "Go to ride." Will you please tell me so? "If I had a horse I would go to ride."

George? "If I had a horse I would take you to ride." Thank you; if your papa gave you a horse, would you whip it? I am glad to hear you say you would be like the kind master.

Carl, you may take the horse. What have you? "I have a horse." Please hand it to Annie. If you did not know Annie's name, who would you say has the horse now, Carl? "She has the horse." (Handing it to a boy.) And now? "He has the horse." You may both hold the horse. Who *have* the horse now? "We have the horse." (Teacher holds it.) "You have the horse." (Handing it to two little girls.) "They have the horse."

Children, did you ever receive a letter from grandma? Why did she not talk to you, instead of writing such a long letter? We will imagine that I am "a long way off," and want to tell you about something that I can see. As I cannot make you hear, I am going to write it in a little letter on the blackboard; then I will write what you tell me, also. (Holding up the horse before the class.) What do you see, Alice? (Write her answer on the board.) "I see a horse."

Who would like to read Alice's story? (Write, "I see a horse" on another part of the board.) Who would like to read it again? (Write it on a slate.)

Here is a story on the slate. Susie please read it to us. (Write the same sentence on the floor.) Who can look so low, and tell us what is written there? (Write again on paper.) Here is a little letter. Yes, we can each read that, can we not? (Handing the horse to John.) What *have* you, John? Please *whisper* it to me. (Write on board, "I have a horse.")

Who can read what John whispered to me? That is much better than *seeing* a horse. I wish that story could be made true for each little boy and girl in the class. (Write it in several places as before.)

Who remembers Alice's story? Who can find another just like it? And still another? John may now tell aloud to the class what he whispered to me. You see you told me correctly, before hearing John. Find the story that tells me you have a horse. Now you can only see him. Where is the story that tells me so?

Let us erase all the stories that say, "I see a horse." What are left? Each may read and then erase, "I have a horse."

I am going to give you some little letters that I have written you about the horse, and after you have traced over the stories, you may take them home and read them to mamma and papa. Yes, and "to Uncle Charlie and Aunt Kate, too," if you wish.

(As fast as the sentences are learned, and later the words, they are written in blank books and taken home by the children at night. By reading them so often, they become fixed in their minds. It also helps to connect school and home life.)

The Teaching of the Number Five.

By A. B. GUILFORD, Jersey City, N. J.

There is a great deal implied in the *knowledge* of a given number. Let us see what the child must be able to do before he can truly be said to *know* a number.

1. To recognize it as a whole and to recognize and be able to make its symbol.
2. To measure it by known measures numbers previously learned.
3. To compare it with other numbers learned and to state the result of this comparison.
4. To combine all possible numbers to make it.
5. To separate into all possible parts.
6. To apply knowledge gained in preceding steps in many practical examples.

An exemplification of this treatment of a number is found below.

A.

Harry, hold up two twos. Mary, hold up three and one. Lulu, take enough ones to make the number Harry and Mary have. Molly, hold up half as many as Harry has, one-fourth as many as Mary has, and one-fourth as many as Lulu has. All the rest may hold in the air this number. What is its name?

Put the "four" on the table before you. Put enough more blocks with it to make this number (holding up five blocks). Who will tell me the name of this number? "It is five."

All hold up the new number and pronounce its name.

Each one of you may show me the new number. No one may use the blocks in doing so.

Each may bring me the number five to-morrow morning. Try and get a five that you think no one else will have.

B.

Let us all get this new number and see what we can find about it. Find how many times you use one to make it. Measure it with one. "It takes 5 ones to make five."

Take one away as many times as you can. Jennie, tell us about that. "When you take one away from five, five times, five is all gone."

That is well, Jennie. You may say, there are five ones in five. What number shall we next measure five with? How many twos do you find in five? "There are two twos and one over in five."

Good. Measure it with three. Who will tell me about it? John. "I find one three in five, and two are left."

Measure with four and tell me what you find, Harry. "One four and one make five."

Who will measure it with five? "There is one five in five."

C.

Hold up one of your five. How many such parts of five in five? "There are five such parts of five in five."

One is what part of five? The pupils should be able to state that one is one-fifth of five. If they do not make this statement it will be because they have not thoroughly comprehended the treatment of fractional parts of the numbers that precede five.

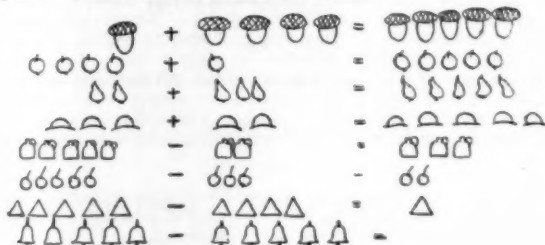
Mary, bring me two-fifths of five. Harry, you may give John three of your five. Tell me, John, what part of five you have? "I have three-fifths of five."

Paul, what part of five is the number four? "Four are four-fifths of five" (holding up four).

How many fifths of five are five?

D.

Children delight in making picture tables. Below is given a sample of such a table as the children built without much effort. In case they are at any time at a loss in determining the parts of the combination, as the result of the combination of the parts, they may have recourse to the blocks.



E.

Indicating the fractional parts of five the pupil may be allowed to build the picture and indicate by a cross or otherwise the part of five considered. After the picture has been built it may be read by the pupil.

ORAL STATEMENTS,

- M M M M M } One M is one-fifth of five M's.
- □ □ □ □ } Two oblongs are two-fifths of five oblongs.
- O O O O O } Three letter O's are three-fifths of five letter O's.
- ○ ○ ○ ○ } Four circles are four-fifths of five circles.

F.

The pupil may use objects to illustrate their answers to the following questions. Having arranged the blocks they should use the arrangement in proof of the statement.

1. How many more than one is five? 2. What number is three less than five? 3. How many ones make five? 4. How many threes and what make five? 5. What is three-fifths of five? 6. Five is how many more than three? 7. What number is three less than five? 8. Four is what part of five? 9. How many fours in five? 10. Two twos and what make five?

G.

The following will not be too hard for the pupil, and the language side of arithmetic is to be constructed on no other plan:

1. What number is three more than two? 2. What part of five is one-half of five? 3. Two times what number and one make five? 4. Five less three leaves what part of five? 5. One-half of two and one-third of three make what part of five? 6. Three

and what part of four make five? 7. Three-fourths of four and two ones are what part of five? 8. Five less two-thirds of three are how many? 9. One-half of four + two-thirds of three + one are how many? 10. Three-fourths of four are what part of five? (The above should be worked out by the pupils. The tenth thought out by the pupil would appear as follows:

O O O O O O O O O O

(Three-fourths of four are equal to three-fifths of five.)

H.

(Now comes the practical application of the work wherein a great number of problems are given by the teacher and the pupils are required to prove statements made in answer by use of blocks. Here also comes that still untilled field in which the pupil, recognizing the relations of numbers, builds his own problems to his great delight and benefit.)

Physical Culture in the Public Schools.

Lesson IV.

By R. ANNA MORRIS, Supervisor Physical Culture, Des Moines, Ia.

THE RELAXING EXERCISES.

Through self-consciousness, or awkwardness, people are constantly falling into constrained, unnecessary positions. There is hardly a child who has arrived at the age of ten or twelve years, who does not sometimes stiffen and twist himself in physical torture because he does not know what to do with his hands and feet. Before this habit of wasting the vital forces becomes fixed, he should be taught how to rid himself of this nervous strain. When he has once learned the lessons of "letting go of himself," as it were, and feels sure that his head and feet will stay on without watching, he is in the possession of a knowledge that will be a blessing to him through his entire life.

Our overworked American people, and especially the teachers, need to know the secret of resting the muscles and freeing the tired nerves, when they are not in use.

This needed training can be had by a faithful, thoughtful practice of the *relaxing exercises*.

With the young it does not require a long continued drill; just an occasional exercise is sufficient. I would not advise the exclusive use of these exercises for school children. Careless children are apt to take advantage of them, and relax too often; however, that depends very much on the way in which they are presented to the children. They surely have their proper place in a well rounded system of body training.



Fig. I.

EXERCISES.

First group. Standing with one foot a little in advance of the other, lean slightly forward, at the waist, and extend the arms in front, palms down; then surrender the hands at the wrists, and shake them vigorously. Imagine that you are flinging drops of water from your fingers. (Fig. 1). With arms in this position shake the hands; (a) up and down; (b) in and out; (c) around and around.



Fig. II.

Second group. (a) Extend the arms in front, palms facing; relax the hands and shake them up and down as in a threatening gesture. (b) Swing the arms backward and forward on a horizontal line shoulder high and make the hands move strongly at the wrist, as in a negative gesture. I sometimes say: "Let us 'scatter sand,' as we throw our hands from side to side." (c) Swing the arms from the shoulders, forward and backward. (d) Raise the arms above the head; then let them drop "all at once," as ropes would fall.

Third group. (a) Elevate the shoulders as much as you can, then drop them, letting the arms hang lifeless. (b) Shrug the shoulders from the right to left, and reverse.



Fig. III.

Fourth group. Stand firmly on both feet; (a) relax and agitate the body, throwing it to right and left. (Fig. 2). (b) Slowly let the body, above the waist, fall lifelessly forward—as seen in Fig. 3; there rest a moment, then raise it gradually to erect. As the body is brought to upright, carry the shoulders up, and then back and downward, at the same time expand the chest to its fullest extent. (c) When the body has come to erect take a full deep breath. In the same manner as in the forward movement let the body fall to right, left, and back.

Fifth group. (a) Stand on one foot; swing the other leg, from the thigh, forward and backward. Reverse and repeat. (b) Stand on one foot; shake the other foot vigorously. Reverse and repeat.

Order of Practice.

(To be written on blackboard.)

- I. Hands. Up and down; in and out; around and around.
- II. Arms. Up and down; horizontal; forward and backward; dropping.
- III. Shoulders. Raise and drop, shrug.
- IV. Throw the body right and left. Drop forward; drop right; drop left; drop backward.
- V. Swing; first the right, then left leg.
- Shake; first the right, then left foot.

(Through a misunderstanding, Fig. 3, in Number III, of this series, Nov. 28, was incorrectly shown; the position being too far backward.—Eds.)

Early Lessons in Form Expression. V.

By GRACE HOOPER, Rice Training School, Boston, Mass.

BISECTION OF CUBE.

We all remember, I think, that the other day we bisected a sphere. What do I mean by the word "bisect," May? "Cutting the sphere into two equal parts." Right; to-day we will take the lumps of clay which I have placed on the slates, and make a cube, just as we did some time ago. Let us see if you can remember to make the faces and edges correctly. After it is finished you may take the linen thread, and place it exactly across the middle of one face, just as I am doing; draw it through and bisect our cube. (Fig. 1.) Try to make the halves exactly

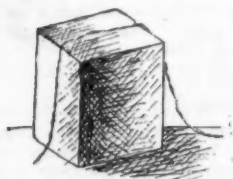


Fig. 1.



Fig. 2.

alike. Now tell me something about these parts. "They each have the same number of faces as the cube, but they are not all alike." Right. James was a bright boy to discover that. "The corners are all right angles." "The edges are straight, but they are not all the same length, as they were in the cube." Look at the face we first cut. Is it a square now? "No, it is half a square." Here is a paper square. I will give each of you one, and you may fold it, so that it will look like the half square on the clay block. We name this shape an *oblong*. (Fig. 2.) Can anyone see, or think of anything that is in this shape, or nearly so. Yes, Susie, "the cover of the reading book." "The picture on the wall." Gertrude, what have you found? "The door, and the blackboard." "The box on the table." No, not the whole box, Philip; a *face* of the box. An oblong is the *shape* of a face, not a block.

BISECTING A CYLINDER.

We are learning to cut our clay forms very nicely, and to-day we will try the cylinder. Make a whole cylinder first. I am sure you remember how to do that; then watch me, and I will show you how to place the thread carefully across the middle of the circular face. (Fig. 3.) Press a little, then take the ends in your fingers, and cut right through the clay. What is the word which tells what I have done? "Yes, I have *bisected* it." Work care-

fully and slowly, and try to get two nice even parts. We will put them away to dry, and study them to-morrow.

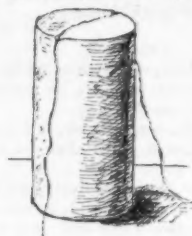


Fig. 3.



Fig. 4.

STUDY OF THE HALF-CYLINDER.

What stories can I hear about the half-cylinder we made yesterday? Helen first: "I see two faces, one plain, one curved." Gertrude, what is yours? "Helen forgot to tell about the two end faces, and that makes *four*." What is the shape of the end faces? "Semicircles." Have we ever seen semi-circles before? Yes, "in the hemisphere." What is the shape of the other plane face? "An oblong." Tell all about the oblong face, John. "It has four straight edges; two long and two short, and four right angles." Let us see what the half-cylinder will do. "It will stand, slide, and rock."

I wonder if we can think of anything that has the shape of this block. Perhaps you have seen something in the kitchen closet at home. Yes, "a nutmeg grater." (Fig. 4.) We will make one of clay. First a cylinder, then bisect it. Now take as much clay as you can cut out of the oblong face without breaking it, with our little piece of wood. Make some holes with the tooth-pick, a little handle of clay, and two flat strips for the back, and it is finished.

PAPER CUTTING.

The children's first experience in the use of scissors may be an exercise preparatory to cutting for themselves the shapes they have studied; it may be of this nature: To each child is given a sheet of brown ruled paper, and a pair of scissors. They are directed to cut the paper into a number of strips, cutting exactly on the ruled lines. This will be found to require quite a little practice, simple as it appears. In another lesson they may fold the paper on the line, and again, across the lines and cut on the fold. The teacher may prepare some papers with curved lines and ask the pupils to cut on those. The squares and circles may be folded as before, and cut into oblongs, and semicircles.

PENCIL HOLDING.

Thus far, no expression by the pencil has been called for; as it is the most difficult, it may well be deferred until the little fingers have become skilled in the more simple tasks.

Before any drawing is attempted, the pencil should become a familiar tool to the child. It is important from the first to spend a few moments each day in drill on position in sitting, and in movements of the hand and arm.

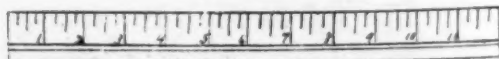
POSITION.

The pupil should sit facing the desk, back as far as possible so as to allow of free movement of the arm. Exercises should be given without the pencil at first, such as opening and closing the hand; turning the wrist; pointing the fingers forward and to the left; and drawing imaginary, horizontal, and vertical lines on the desk.

Circular movements may also be given. Strive to obtain freedom in the motions of the hand and wrist. Afterwards put the pencil in the hands and repeat the above exercises. Insist upon having the pencil held about two inches from the point. (Fig. 5.)

If the pencil be correctly handled, the character of the work of drawing will be on a much higher scale than that produced by cramped and awkward manipulation.

THE RULER.



The ruler is another instrument which the pupil must learn to use.

METHOD.

Take your new rulers, children, and look at the figures you find

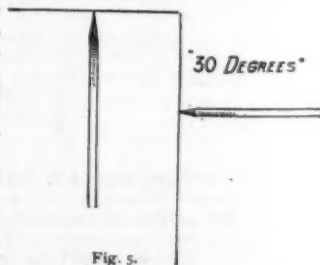


Fig. 5.

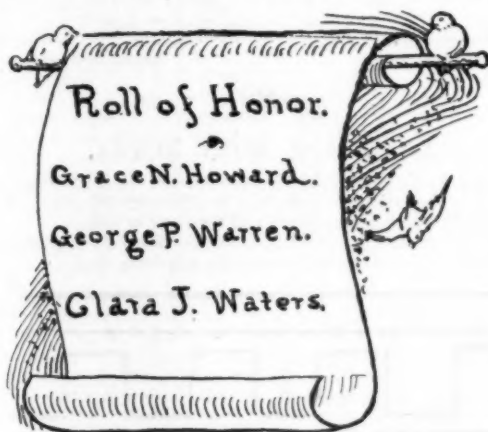
on them. How many do you see? "Eleven," is right. All find the distance from the end of the rule, to the figure 1. That distance is called *one inch*. Now find the figure 2. Is it the same distance from 1 as the first space. Yes, so we call the distance from the end to 2—? Louise may tell. "Two inches." (So continue with the remaining inches.) Do you see a long line, between 1 and 2? What does it do to the space? "Divides it into two equal parts." Then what might each part be called. "One-half an inch." Find as many more half inches as you can on the measure. Julia thinks there are 24. (Let different lengths as one-inch and a half, three inches, etc., be found and drawn.) Now, children, try to make one inch, and two inches without measuring, then test them with the ruler. All measure the piece of paper on the desks. I will write what Henry says. "Five and one-half inches." What does May wish to say. "Henry did not tell how much it measured the other way, and it is three inches." (Drill on the measuring of books, slates, pencils, etc.)

Ways and Means.

By E. D. K.

The inherent desire to see one's name in print, may account for the potency of that little device in the school-room, known as "Roll of Honor." If a teacher knows how to manage this little piece of chalk design on the blackboard it can easily be made an incentive that shall be the heavy "ounce of prevention" to outweigh the "pound of cure," in school discipline.

"If you are neither tardy nor absent for a week, your name shall be placed on this Roll of Honor next Monday morning." Now this is one of those propositions that depends wholly on the way it is said. One teacher may say this in a stolid, meaningless way



that will be only the right on and on monotone, that will completely kill ambition. Another teacher who has a glimmering of an idea what is meant by the term "human nature" in this connection, will say this, with a *look* and a *tone* that will locate that honorable "Roll," in the seventh heaven of bliss, and put into the soul of every child the determination to "get there" or die in the attempt. Shall this power to inspire be called tact, management, or what? Is it not simply the warm heart of the teacher who has not yet lost all naturalness and child-sympathy, voicing itself in a tone?

If the teacher has an interest that the child shall *enjoy* these little ways and means, they are effective—not otherwise.

A Lesson in Modeling.

By LIZZIE M. HADLEY, Lowell, Mass.

(Teacher holding up a sphere.) What have I here? "A sphere."

Tell me the whole story. "You have a sphere."

How do you know it is a sphere? "Because it is round."

(Holding up a cylinder.) This is round; is it a sphere? "It isn't round all over. The sphere is like a ball."

Very well, James. How will a ball roll? "A ball will roll every way."

Then when you have anything that will roll every way you may know that it is a —? "A sphere."

You may take your clay and roll it very gently till you have a sphere.

Now let me see whose sphere will be perfect, and while you roll the clay you may repeat this verse.

We are each of us making a little ball.

Roll it and roll it and don't let it fall.

Round now and round see us work the soft clay,

And when it is done it will roll every way.

Roll it and turn it then roll it again,

My bonnie wee women and brave little men;

Roll this side and that side, now there and now here.

Now it's done and we're holding a pretty clay sphere.

(All hold up spheres.)

Place the spheres on your desks, and tell me all you can about them.

"A sphere will roll every way." "A sphere will stand." "A sphere has one round surface."

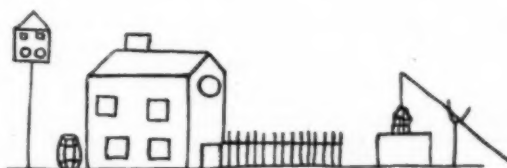
Fred may collect the spheres, and we will play you are millers and have a great deal of corn to grind. Your hands may be the mill-stones. (Children sing while hands describe a circle.)

"This is the way we grind the corn, grind the corn, grind the corn,"

This is the way we grind the corn, the mill-wheel swiftly whirl-

Now I think your corn is all ground, and you may be very quiet and watch me. (Sketching on the blackboard.)

Tommy may find a sphere in the picture. Mamie another sphere. Susie may find a sphere. Jimmy may find a cylinder. Rose may find a cube. Lily and Willie may find cubes.



You may make me this picture with the building sticks (or tooth-picks). I will give you cardboard spheres and cylinders to use. Be sure you put them in their right places.

Lesson on The Yard.

By BELLA HERRING, Avalon, Pa.

Here is a *long* measure (showing a yard-stick). Who knows how long this measure is? Suppose I wanted a piece of ribbon just as long as this, how much should I buy? "A yard." Yes, James, take your foot-rule and find the length of this stick. "It is three feet long." Tell me in another way how long it is. "Thirty-six inches." Draw a line on the blackboard a yard long. Measure it. How many feet long is the line? "Three feet." How many feet, then, make a yard? If this table is just a yard wide how many feet wide is it? Mary, take this twine and measure off a yard. In what kind of a store have you seen a yard-stick used? What do we buy by the yard? Yes; when we measure "cloth" or "ribbon" we use a yard-stick. Have you ever seen any other kind of a yard measure? "My mother has a tape for measuring yards."

You may guess the length of this room. Henry may take the yard-stick and measure the length. If this room is nine yards long, how many feet long is it? What is the distance from the door to the stove? From the stove to the window? From the table to the side of the room?

If I wanted a piece of ribbon just half as long as this stick, how much should I buy? "A half yard." John may take one of these strips of paper and cut off a half yard. How many inches long is a half yard? A piece of cloth a half yard long is how many inches long? If I wanted a piece of ribbon only half as long as a half yard, how much should I buy? "A quarter of a yard." Show me on the yard-stick how long a quarter of a yard is. How many inches long is a quarter of a yard? A piece of oil-cloth three quarters of a yard long is how many inches long? What part of a yard is twelve inches?

At 6 cents a quarter of a yard, what will a yard of ribbon cost? What part of a yard is nine inches? What part of a yard is eighteen inches? What part of a yard is twenty-seven inches? How many feet in six yards? In seven and one-half yards? In five yards and two feet? In four yards and a quarter and three quarters of a yard? How many inches in one-half of two-thirds of a yard?

At four dollars a yard, what will three-fourths of a yard of velvet cost? If a quarter of a yard of cloth costs one dollar, how much would 4 yards cost?

If Ned's kite has a tail two yards and a foot long, how many feet long is it?

Write on your slates,—

3 feet make one yard. 18 inches make one half yard.
36 inches make one yard. 9 inches make one quarter yard.

Busy Work.

(In compliance with a universal request for "Busy Work" for little children this column of the Primary edition is set apart in THE JOURNAL. Little folks cannot always be kept on the "three R's." There is a natural psychological demand for relaxation and variety, and for something with which to busy the fingers. Teachers of primary rooms, especially those who "have so many children they don't know what to do," have resorted to all sorts of expedients to keep the little hands out of mischief. These expedients have not always been wisely selected, and have not been educative in their use or tendency. It is of very little worth to give children "things to play with," unless that play is educative in the Froebelian sense, and is as much a part of their mental training as any other part of the school regime. Several faults stand out in the employment of "busy work" by teachers. They do not always insist upon carefulness and accuracy in the doing of this work. The same carelessness which is condoned in this manual training will re-appear all through their other work, and a lack of thoroughness is thus permitted to enter into the child's character. Again children are allowed the use of material for so long a time as to wear out the enjoyment of it. The greatest skill is necessary to know how much and how little of this work can be given to children, and still leave them with a desire for more. If each child could have its own box of materials, a sense of ownership in it would greatly increase the value of the exercise in the child's mind.)

Calendar Making.

(For Second Year in Primary School.)

Material.—Pencil, slate, and pasteboard ruler.

Aim.—To teach the arrangement of the days of the month, abbreviations, figure-making, printing, measuring, and carefulness in ruling and making.

Method.—(Copy of calendar on blackboard.) What is this, children? Who can tell me how to write the word "calendar" on the board? When you buy a calendar, is there any month but January in it? How many months? Give me their names. How many days are there in the months? Which have thirty? Which have thirty-one? How many know the little verse that tells the different days in each month? What are these little letters under the word January. Give the names of the "days of the week."



Why are not these names written out? Who can tell me how to write that long word "abbreviations"? Get your slates, pencils, and rulers, and make a calendar just like this. Make it about four inches long and be just as careful as you can be to do all the ruling, figure-making, and printing very nicely.

If you have any time left after you have finished the calendar you may draw any design you like over it, to make it pretty.

E. D. K.

Parquetry.

Materials.—Squares of paper (4x4 inches), primary and secondary colors; large sheets of white paper for mounting; paste, brushes or slate and scissors.

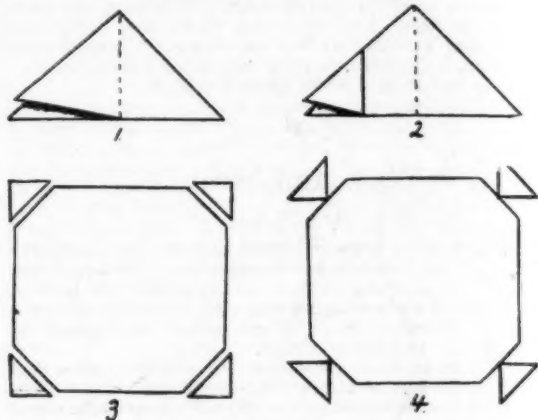
Aim.—To stimulate preception, to utilize the child's natural propensity to cut with scissors, and to encourage accurate execution.

Method.—Each child receives a square of white paper, one of colored, a slate or brush, and some paste. When the smaller squares are turned diagonally the bottom corner is folded to the top, then the corner at the right and the one on the left come together. The papers are now to be turned so that the base-line is nearest to the children and the closed side at the right. The upper corner on the left is folded to the right, and then the papers

are turned over so that the corner which was on the left side is on the right, still keeping the base-line to the front. This corner is now folded to the left, making a right-angled triangle of eight thicknesses.

When the base-line finds its place again, and the closed side is at the right, the upper corner on the left side is folded over to the right making a vertical fold from the apex to the base-line, and is then turned back again. (Fig. 1.) Now the same corner is brought to the point where the last fold touches the base-line and another vertical fold is made.

The teacher's pencil emphasizes this last fold so that the scissors may follow it more accurately.



Talk to the children about the octagon and four triangles which come out after the papers are cut and let them paste (Fig. 3.) The next arrangement they should find for themselves.

N. Y. City.

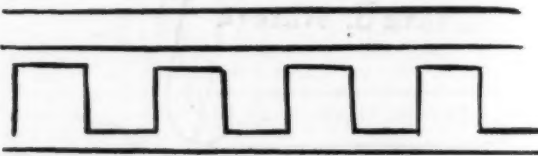
AIDA R. DEMILT.

Designing with Sticks.

Material.—One inch sticks of any color that the teacher may select. Two inch sticks to harmonize in color with the others.

Aim.—To teach arrangement and harmony of color.

Method.—First allow the pupils to copy from the blackboard, afterward to arrange from memory, the following design:



Trenton, N. J.

ANNA A. L. LEE.

A Child's Observation of Form.

By A. F. AMES, Riverside, Ill.

When Caryl was three years of age she had given to her some small kindergarten spheres, cubes and cylinders, of different colors. A few days after she strung them all on a string, selecting all the cylinders first, then all the cubes, and, lastly, all the spheres. She then found another cylinder. Her mother told her to put it on the string, thinking she would put it on next to the spheres. Instead of doing so, Caryl took off the spheres and cubes, put the cylinder with the others, and then strung the cubes together and the spheres together as before.

As Caryl grew tired of playing with her blocks they were put away, until she was 3 years, 2 months, and 5 days old. On that morning her blocks were given her to play with. Caryl put all of the blocks in a little basket and strung them very quickly in the following order: first, the cylinders; second, the cubes; and lastly, the spheres.

These and other instances show that she recognizes similarity in form more readily than similarity in color. But why did she choose the order, cylinder, cube, sphere, in preference to sphere, cylinder, cube, or some other order?

Is it not possible that since cylindrical forms, such as trees, table legs, chair legs, etc., occur more frequently than cubical or spherical forms, that Caryl's attention has been unconsciously directed to the cylindrical form?



Picture Stories for Language Work. I.

These pictures are made large enough for children to see them across the room. They may be detached and hung up for use in language work.



Picture Stories for Language Work. II.

Supplementary.



"Oh! good New Year we clasp
This warm, shut hand of thine
Loosing forever, with half sigh, half gasp,
That which from ours falls like dead fingers twine;
Ay, whether fierce its grasp
Has been, or gentle, having been, we know,
That it was blessed: let the Old Year go!"

—Mrs. D. M. Craik.

"They say that the year is old and gray,
That his eyes are dim with sorrow,
But what care we, though he pass away?
For the New Year comes to-morrow.
No sighs have we for the roses fled,
No tears for the vanished summer;
Fresh flowers will spring where the old are dead,
To welcome the glad new-comer."

—Mrs. Emily Huntington Miller.

"Where do the New Years come from?
Asks Goldilocks in her glee;
Do they sail in a pearly shallop
Across a wonderful sea,—
A sea whose waters with rainbows spanned
Touch all the borders of fairy-land?"

—Selected.

A Little Study in Anatomy.

How many bones in the human face?
Fourteen, when they're all in place.
How many bones in the human head?
Eight, my child, as I've often said.
How many bones in the human ear?
Four in each, and they help to hear.
How many bones in the human spine?
Twenty-four, like a climbing vine.
How many bones in the human chest?
Twenty-four ribs, and two of the rest.
How many bones the shoulders bind?
Two in each—one before, one behind.
How many bones in the human arm?
In each arm one; two in each forearm.
How many bones in the human wrist?
Eight in each, if none are missed.
How many bones in the palm of the hand?
Five in each, with many a band?
How many bones in the fingers ten?
Twenty-eight, and by joints they bend.
How many bones in the human hip?
One in each, like a dish they dip.
How many bones in the human thigh?
One in each, and deep they lie.
How many bones in the human knees?
One in each, the kneecap, please.
How many bones in the leg from the knee?
Two in each, we can plainly see.
How many bones in the ankle strong?
Seven in each, but none are long.
How many bones in the ball of the foot?
Five in each, as the palms are put.
How many bones in the toes half a score?
Twenty-eight, and there are no more.
And now altogether these bones may wait,

And they count, in a body, two hundred and eight,
And then we have in the human mouth,
Of upper and under, thirty-two teeth.
And now and then have a bone, I should think,
That forms on a joint or to fill up a chink.

—Selected.

The Bashful Boy's Piece.

There were never two people exactly alike—
At least so philosophers say—
And I know if the teacher and I were alike
All would not speak pieces to-day.

I like to hear Jennie get up and recite,
She does it in such a fine style;
Her hair is so smooth, and her hands are so white,
And she has so complacent a smile.

You hear every word, and each motion is grace,
An actress could scarcely do better—
She'd as lief do all of the speaking, I guess,
And I know I would cheerfully let her.

But oh, when John Wilson or I get the floor
We seem to have come here to stay;
Our hearts beat like hammers, our feet weigh a ton
And our hands are right square in the way.

—Cincinnati Public School Journal.



Playing at Housekeeping.

By RUTH DAVENPORT.

(Recitation, in character, for Friday afternoon.)

How do you like this suit of mine?
Susy and I think it quite fine.
We two are playing house you see,
And I the busy maid will be.

Sue is the mother and will ride
With nurse and children by her side.
Her coach, the parlor easy-chair;
Her span, two small ones that are there.

While they are gone, I'll sweep the room,
And use my mamma's brand-new broom;
Brother Tom makes fun of it all,
But it is better than base-ball.

When he came to supper last night,
You would think he had been in a fight,
A black spot where the ball had hit
And he couldn't use one hand a bit.

He would think it cruel, I know,
If it were ~~work~~ that lamed him so.
But hark! I think the coachman rings
You know we only "make-believe" things.

Stories for Reproduction.

Georgie Fox was nine years old last week. He had a birthday party. On the table was a big cake with nine candles around it. There were nuts and candy and fruit and a great many good things.

"I can't," said Jenny, so she cried over her lesson, and when the class was called to recite she did not know anything about it.

"I'll try," said May, and she kept at work all the time Jennie was crying. She knew her lesson so well that her teacher praised her.

Daisy always tries to help somebody, and that must be the reason that she is always smiling and happy. If brother Tom wants to be shown about his lesson, Daisy does it. She is very often called "Little Helper" instead of Daisy.

"Give me a penny," said little Jack to papa. "Is that all you say?" asked papa. "I forgot the please," said Jack, looking a little ashamed.

Mamie found five cents in the street. She did not buy candy. She did not spend it for peanuts. She bought a cake and an apple and gave it to the little girl who never brought any lunch to school.

Miss King has thirty boys in her school. They are well, strong boys, except Willie May. He is lame, so he cannot run and play ball. The other boys are very kind to him. They often play some easy game so he can join them.

One day Helen did not want to go to school. She said she was sick, and wanted to stay in bed. "If you are sick," said her mother, "you must have some medicine. I shall give you nothing but tea and toast for breakfast." Helen did not like staying in bed, after all. So in the afternoon she was glad to go to school.

"Wear the old dress, Katy," said mamma to her little girl. "Yes, mamma," said Katy. But she went up stairs and put on the new dress instead and went to school. It was a pretty dress, but Katy did not feel happy.

Tip is a tame squirrel. He was caught in the woods when he was very little. He has a nice large cage with a wheel in it. It is very funny to see how fast he can go around the wheel. He carries all the nuts and candy he can get and stores them away in his nest.

Jennie is naughty sometimes, and then her mamma tells her to stay in her room till she is good. One day Jennie played that her doll was naughty, and she shut her up in the playhouse till she was a good doll again.

Tommy Brown sprained his ankle, and had to stay in bed. He got tired of reading and playing games, and was wishing for something else to do. Just then the door opened and Snap his dog, ran in. Tommy and Snap were very glad to see each other, and they had fun playing. Tommy tied a handkerchief around Snap's leg, and made believe that the dog's ankle was sprained too.

Jimmie came home from school one night and told his mamma that he was next to head in his class. "How many are there in the class?" asked mamma. "Just two," said Jimmie. "Annie Day and me." Mamma laughed, but Jimmie did not know that he had said anything funny.

When Robbie was six years old he went to school for the first time. He did not know that it was not right to talk and run about the school-room as he did at home. The teacher told him all about it very kindly, and he told her he would remember. It was not long before he knew how to behave as well as any boy there, and he liked the school very much.

Tom thought he would do something funny. So he blacked whiskers on his face with his mother's shoe-blackening. She did

School Song.

E. D. KEITH.

The third stanza may be used at the close of school.

1. Our school is now in or - der, Each one is in his place,
2. Our teach - ers dear will help us To do our ve - ry best,
3. Our school-day now is o - ver, And we may go and play;

Our hands and shoes are ti - dy, And smiles on eve - ry face.
We'll all be ve - ry qui - et And not dis - turb the rest.
We lay a - side our stu - dies And homeward take our way.

We think we know our les - sons, To learn we'll sure - ly try,
If les - sons be not ea - sy We will not whine "I can't."
But we'll come back to - mor - row, All fresh and bright for school;

We soon will do our du - ty, Not wait till bye and bye.
And when we're told to do them We'll nev - er say "I sha'n't."
We'll try to be good schol - ars, And not break an - y rule.

(42)

not scold him, and she told him he must keep it on till tea time. Tom began to cry right away, and begged her to let him wash it off. After a half hour, mamma thought he was sorry, and she told the nurse to wash his face.

Little Ida lived in the house with a lady who had a bird. It was not a canary bird and could not sing very well, but it was so beautiful that everybody went to see it. It was blue and yellow and black and green.

It made a great splash when it bathed, and Ida went stairs every day to see it bathe and watch the bubbles drop from the perch after it was over. The bird soon learned to know Ida who never did anything to frighten it.

FOR THIRD YEAR.

As Frank went along the street he met another boy who was throwing stones at a dog. Frank stopped and told him that he ought to be ashamed of himself. He said it was his own dog and he had a right to treat him as he pleased. "I'll buy your dog," said Frank. How much do you want for him? "Fifty cents." It was all the money that Frank had; but he paid it and took the dog home. He gave him plenty to eat and took good care of him, and he never was sorry that he bought him.

Gertrude went to a school so far away that she had to ride every morning. She liked this very much. One day she noticed a lame little boy on crutches who was going to another school close by. She asked her father if they might take him into the carriage every morning and carry him to his own school. Her father was a generous-hearted man and agreed to the plan very readily. One day they missed him on the road and found by inquiry that he was very ill. Gertrude carried him fresh flowers every day and when he was able to be out again, she invited him to come and have tea at her house in the afternoon. He grew to be a strong boy as he grew older and did a great many kind things for Gertrude. He made her a handsome sled and painted the word "Kindness" on the side of the sled for its name. Why do you suppose he chose that word?

The Educational Field.



Mary E. Burt.

Miss Burt was born at Lake Geneva, Wisconsin. Her early life was passed in the country, where the unlimited freedom of out-door life, gave her a contact with real things, and a physical basis for ideas. In her early school life she had the advantage of excellent teachers—men who afterwards made their mark and were recognized as broad people. Of her schoolmates she says: "I have never met a class so broadly informed elsewhere." Miss Burt began to teach very young at \$10 a month, going to school, between terms, at Lake Geneva seminary.

Coming to Chicago she began teaching in night schools. She found great assistance from prominent teachers and received an appointment to a primary school. From this work she went to Oberlin college where she remained six months, going afterwards to Alabama to work among the freedmen awhile. Returning to Chicago she continued teaching for five years, going from there to River Falls normal. Returning to Chicago, she passed a year in the Academy of Design as a pupil, returning as teacher to her former school in that city where she remained for eleven years. The next three years she passed at Cook Co. normal, leaving there to go on the board of education in 1890-91. In this office she was the author of the amendment, whereby eminent teachers, and college graduates with a successful record as teachers shall be admitted to teach without written examinations, and also introduced other important changes for the benefit of the schools.

As a student Miss Burt says: "I was never without a private teacher—a specialist." In the languages and in art she has been a constant student.

As a writer, this lady is known as the author of "Seed Thoughts;" "Browning's Women;" "Literary Landmarks," First Volume of the "World's Literature", besides constantly contributing to prominent educational journals, the daily press, *Atlantic Monthly*, and other papers. Miss Burt has also been before the public at the National Association, Nashville, Institute of Pedagogy, St. Louis, Woman's Association at Bloomington, Association of Teachers at Indianapolis, and at several other gatherings where she read valuable papers.

Drexel Institute.

This institute was dedicated December 17. It is situated on Chestnut and 33rd streets, Philadelphia. Prof. James MacAlister is the president; it will open in September next. The address was by Hon. Chauncey M. Depew:

"All the conservatism of centuries has crystallized about the university. Every radical effort to break up old systems and proceed upon new lines has met the combined hostility of faculty and alumni. They point to results, to the long list of men eminent in the professions and in literature, whom the schools claim to be their product and examples.

"But there came an imperative demand that the time-honored course of classics and mathematics must be supplemented by the scientific school, the necessities of practical life have forced the university to give equal honors to other departments.

"Competition is the law of our age and survival of the fittest its fruit. Cheapness and excellence have become the factors of prosperity for nations and for towns.

"Our plain duty is not to waste precious hours in vain regrets for the good old times or wring our hands in helpless horror over the difficulties of the present. The pace of progress may have been faster than our preparations, but experience has demonstrated that, when intelligently met, the new is always better than the old. The man who dies for a principle is a hero, but he who starves rather than abandon the methods which fed his fathers is a fool; for the vast army that must live by labor adequate provision has not yet been made. This splendid institute of art, science, and industry leads the column and points the way. The manual

training school solves the problem of labor and industrial development.

"This institution recognizes that one of the chief glories of the new education is the advantages it gives to women, and they may all enjoy its privileges, and here acquire the power which will enable them to fight for and win their rights. This institution is an object lesson in the proper use of accumulated wealth; it is a practical and beneficent illustration of the Divine injunction, 'Thou shalt love thy neighbor as thyself,' which extends the helping hand and tenders warm and sympathetic encouragement to the brother who wants to help himself."

The deeds of gift representing \$1,500,000 were presented by Hon. Wayne MacVeagh:

"I find it extremely difficult to speak in terms of becoming moderation of such generosity. These are, indeed, princely gifts, worthy of the giver and of the noble-hearted wife who encouraged him to make them, and of the high and sacred causes of art and science and industry to which they are dedicated. And these great benefactions possess one characteristic which ought not to pass unnoticed. The money thus freely given is singularly free from liability to even unjust criticism of the manner in which it was acquired.

"It is our happy fortune to feel perfectly sure that no portion of the property to-day transferred represents even a bounty voted or a franchise conferred at the supposed expense of the public, much less any trusts betrayed, public or private. It has never been suggested that the founder of the Drexel institute practiced any arts but manly arts, or that his great fortune was the result of anything but the advantage his comparatively modest inheritance gave him, and his own industry, integrity, and capacity in making use of them. For so the chief attraction of the Drexel institute is the variety of the fountains at which the coming students may choose to slake their thirst for knowledge."

President MacAlister received the deeds and promised on behalf of the trustees that they would, to the best of their ability, discharge the trust imposed upon them. He alluded to the recent death of Mrs. Drexel:

"The companion who shared with the founder the fond anticipations which are in part realized to-day is not here to cheer us with her gentle presence. For the Board of Trustees, for myself, that memory will be the greatest incentive to make the institute worthy of the pure and unselfish purpose which gave it birth."

Belgian Primary Schools.

The *School Guardian*, Eng., says: "The buildings are two stories high, having a gallery on the first floor running round the quadrangle. Each class has its own separate room, lofty, well lighted, and ventilated, but only from one side. The furniture consists of small tables and benches, each sufficient for two or three scholars, and all facing the slightly raised platform for the teacher's desk. The tables have slates fixed horizontally in them. Blackboards are carried round the walls with compartments for the use of each scholar, on which he copies with chalk the sums or geometrical figures or sentences dictated to the class. This is done with a view to enabling the master or mistress to see at a glance the work of each without having to pass round the room. In this way, too, the children have the advantage of a change of posture and find relief from the monotony of the lesson. The teaching is in all cases simultaneous. As no reading is taught in the 'Jardins d'Enfants' or Infants' Schools, the lowest classes have to learn the letters and their simplest combinations. These they enunciate together, and great pains are taken to make them give each letter and syllable its full and correct sound.

Writing is learnt from a copy set on the blackboard. A round, vertical hand is taught without any distinction between the up and down strokes. Elementary drawing is obligatory in all the primary schools, and is taught by the ordinary teachers, who have no difficulty in teaching it, having practiced it in the normal schools as well as previously in their own school days. Some ordinary object is put before the class or drawn on the blackboard."

Kentucky.

At an interesting meeting of the county superintendents of Kentucky held at Louisville, December 2, at which seventy out of one hundred and nineteen were present, a Superintendents' Union was organized and a good degree of interest manifested in the educational progress of the state. The following are some of the resolutions adopted:

"That we are unanimously opposed to state contract, state publication, and state uniformity in the matter of text-books for our public schools.

"That the county superintendents shall be empowered to make such arrangements as will enable the children to secure the necessary school books at the wholesale list prices offered by publishers.

"That we are in favor of the establishment, as soon as possible, of three state teachers' training schools, one in the eastern, one in the central, and one in the south-western part of the state, and that the provisions in the present law for the equipment and conduct of teachers' institutes should be continued.

"First, the county should be the unit of taxation for local aid to common schools; second, that such taxation should be mandatory, and of such amount that, in connection with the per capita, will secure the minimum term of five months."

The report comes from Boston of the marriage of a drawing teacher in the Charlestown school with a Chinaman, who is engaged in mission work. She has been an active laborer in Chinese Sunday schools. A strong objection will arise to the interest young women feel in carrying on missionary work among the Chinese, caused by such incidents as these. The question is now being asked, Why can young women be got to teach in Chinese Sunday schools and not in Caucasian ones?

Two little children who were in their first year at school rather surprised their mother one day by the following incident:

While Mamie was saying her prayers one night before going to bed, her sister Fanny exclaimed, "Mamie, you don't say that *with any expression at all; you must try again.*"

The Chicago *Sunday Press*, Nov. 8, gives a good view of the work in the Cook Co. normal school and under Col. Parker. Here is one thing the reporter saw in the morning: After marching and singing, all who have made any "observations in nature" rise and tell what had caught their eyes. This morning there was a thrilling tale of the destruction of a sparrow's old nest, the work of the marauding swallows. Another told of the fight of a blue jay, and another bird who affected a broken wing and fluttered ahead, just to allure a boy from his nest near by. Another announced that he had brought clams for the new aquarium. Another made a piteous plea for ants—they are in great need of ants—and so on and on went the telling in the most interesting fashion.

Perhaps the most unique and picturesque place the normal school can show is its sloyd room. The light itself has a benign way of shining and touching up the yellow walls, work benches, bright dresses, and beaming faces all aglow with exercise; for those girls have strong fingers, firm muscles, and can handle a plane, a file, or anything for that matter, as dexterously as may be.

"All this calls into the play another side of the brain, that would otherwise be dormant," said the Colonel. "Look at their checks and eyes—there are no 'nerves' here, yet there are people who object to it."

One great point of this work is that no one makes anything for himself—it is for his parents, friends; or else it is some apparatus to be used in the school. The ethical idea is that everything is made for some one or some definite purpose. At Christmas time all the children make their gifts here. Already there were innumerable thread-winders, trellises for vines to climb over, match-safes, and match-scratchers stored away, all symmetrical and finished with great care.

Information reaches us that Gen. Armstrong, of Hampton institute, Va., has been stricken with paralysis, and now lies in a critical condition in Boston.

It is settled that an expedition will be sent to Greenland for the relief of Lieut. Peary early in the spring. Dr. Robert N. Keely, Jr., who was one of the party that accompanied Peary to Greenland, said recently an expedition would be fitted out, and that the Academy of Natural Sciences would defray the expenses, provided the funds could not be raised in any other way.

Dr. Keely and one other of last year's party will go on the expedition. Who will constitute the entire party is not definitely known. Dr. Keely is of the opinion that unless such a party is sent fully equipped for an Arctic season, Lieut. Peary and his associates will never reach civilization.

The page in the monthly primary issue of *THE JOURNAL*, devoted to "Children's Work in Schools" has attracted very wide attention. Applications for representation in these pages have come from many parts of the country and enough have already been received to fill them until May, 1892.

George W. Childs has presented almost his entire collection of rare prints, manuscripts, autographs, and literary relics, valued at \$100,000, to the library of the Drexel institute. This is probably the finest private collection in existence, and represents the work of a lifetime. It embraces some exceedingly rare specimens, including the only complete manuscript of Thackeray in existence, and the only complete novel of Dickens in manuscript outside of the South Kensington museum. For the latter work Mr. Childs has refused \$6,000. Dickens' manuscript is that of "Our Mutual Friend," and Thackeray's, his lecture on George III. It is the original copy from which he delivered his lectures. Both specimens are splendidly preserved.

The collection includes a handsomely bound volume containing portraits and autograph letters of every president of the United States. There are also Tom Moore's family Bible, with the family register in the poet's handwriting, a copy of Hood's Comic Almanac for 1842, on the fly leaf of which is a manuscript poem which has never been published; manuscripts of Leigh Hunt, Hawthorne, Bryant, Lowell, Willis, Gray, Bulwer, and other noted writers.

Principal John A. Demarest, of Public School No. 22, Jersey City, died from pneumonia on Sunday last. He was born in Oradell, N. J., fifty-three years ago, and had been a teacher at River Edge, N. J., and Nyack, N. Y. Last September he was appointed to his present position. He leaves a widow and four children. Those who know Mr. Demarest best esteemed him highly as possessing rare qualities of mind and soul. He believed mightily in educational progress and became a member of the University school of pedagogy, and was pursuing his studies when called away. He had won the esteem of a large circle in his new field of labor, and will be held in honored remembrance.

Your Christmas number is truly a beautiful one. I never saw a school paper to compare with it.
LUCY WHEELLOCK.
Boston, Mass.

New York City.

The geographical collection of the Brooklyn institute will be opened for exhibition in this city on Thursday next at the Arsenal building in Central Park. The exhibition will be given under the auspices of the Teachers' association of this city, by whom the entire expenses will be defrayed. It will be opened for the public for four or six weeks.

The work was undertaken in the belief that the standard of geographical education in this country would be raised and the quality of our own product improved if our people had an opportunity to see and study a collection of the very best wall maps, atlases, text books, topographic models, and other geographical products gathered from the leading countries of the world. The work of our own country is also largely represented. The wall maps and geographical pictures number over 500. Many of them are famous works, and nearly all the greatest geographical houses in the world are represented. There are hundreds of atlases, text-books, globes, models, and other features.

The Brooklyn committee in charge are in correspondence with the educational authorities of other large cities who propose to have the collection exhibited free of cost to the public in their towns at the close of the New York exhibition.

The board of education in New York city have been taking measures to remove the licensed saloons and other nuisances from the vicinity of the public school buildings of the city. The board of excise in answer to a letter from the board send back a copy of the law concerning revocation of licenses, which does not read very hopefully for the applicants.

The Children's Aid Society have during the past year had in their six lodging-houses, 11,770 different boys and girls; supplying 284,804 meals and 208,772 lodgings. In the twenty-one day and twelve evening schools were 9,794 children, who were taught and partly fed and clothed, 516,806 meals being supplied; 2,825 were sent to homes, both in the East and in the West; 1,747 were aided with food, medicine, etc., through the "Sick Children's Mission"; 4,739 children enjoyed the benefits of the "Summer Home" at Bath, L. I.; (averaging about 300 per week); 5,886 mothers and sick infants were sent to the "Health Home" on Coney Island; 66 girls have been instructed in the use of the sewing-machine in the Girls' Lodging House and in the Industrial schools, and 39 were taught typewriting. Total number under charge of the society during the year, 36,866.

The Christmas number has attracted remarkable attention; many subscribers have sent in for extra copies. It costs more than "enterprise"; it costs large educational knowledge and experience; it costs cash; it costs vast labor, to obtain and properly use material. But words of cheer come from all sides, as, "You are making a paper that worthily represents our educational situation." Now, then, good wishers send us in subscriptions.

I consider the Christmas number one of the grandest copies of a school journal I have ever received. But, in fact, every issue teems with valuable aids and suggestions. Very truly yours,
Kenney, III. E. L. HOWARD.

The Christmas number of *THE JOURNAL* is beautiful and full of interest. Long may it live as a herald of live and progressive ideas in education.
Supt. of Schools, Phil., Pa. EDWARD BROOKS, Ph. D.

Educational Notes from Abroad.

Denmark.—The question of the erection of a state college for woman-teachers in Denmark is very much on the tapis at present. Weighty voices are being raised in favor of a state institution, where women could be theoretically and practically trained for being teachers in the national schools, and it is thought that a college of this kind would be far preferable to the various private establishments where the training of such intending lady-teachers is at present going on.

England.—Female teachers are gradually ousting teachers of the sterner sex in England as in America. In 1860, for every one hundred teachers of each class, forty-eight certificated teachers, sixty assistants, and fifty-seven pupil-teachers were females; in 1890, these proportions had risen to sixty certificated teachers seventy-six assistants and seventy-five pupil-teachers. What is the explanation of this? The multiplication of infant schools, the substitution of separate boys' and girls' departments for mixed schools and the employment on account of their efficiency in teaching the lower standards of female assistants in boys' schools. Another important element in the causes that have brought about this change is the greater cheapness of female teachers, which has led to their substitution for male teachers wherever economy had to be studied. It is noteworthy that in Germany the proportion of male and female teachers is completely reversed. A few years ago (and we have no reason to believe that the figures need any serious attention) there were in Germany only nine normal colleges for women, educating 582 students, against 100 for men, educating 9,373 students. In the United States, on the other hand, the proportion of female teachers is greater than in England.

Germany.—The Saxon minister of education has just sanctioned the examinations for diplomas in the subject of electro-engineering in the same way as in the other recognized subjects at the technical department. The students aspiring to a diploma in electro-engineering will consequently have to pass two examinations; the one, at the beginning of the last but one, academic year, and the other on the completion of their technical studies. This step may be considered as an additional proof of the anxiety of the German Governments to raise the status of technical education in their respective country.

Correspondence.

Will you make known, through the columns of your paper, some plan or way of teaching physiology to a school in which physiologies are not used? J. K.

Begin as you would to build a house. Take up the framework first—the bones. Then follow (for yourself) some good text-book on physiology; that is, take the book work and “make it over” to suit the oral form of presentation. There is no telling anyone *how* to do this. Everything depends on the age and intelligence of the children. There is no better opportunity for the teacher to do skilful oral teaching in the whole range of school subjects than is furnished by the subject of physiology and hygiene. Classes in the third reader grade have been taken successfully through a medium sized text-book of physiology by an enthusiastic teacher who had the only text-book. The teacher needs to know how to use chalk and blackboard fairly well, to give correct ideas of the different organs of the body. But, better than this, encourage children to bring bones of chickens and other animals to school. Burn these and soak them in acid before the children, to show animal and earthy matter. Interest the physicians of your town to loan you any preserved specimens they may have. Ask them to come in and talk to the older pupils. Indeed, it is not certain but that your inability to have text-books in this study, is a blessing in disguise. Use as few technical terms as possible, and be sure to give plenty of practical talks on hygiene, and teach the children how to take care of themselves.

Will quicksilver poured in a pond break the dam, and why?

N. C.

M. M. J.

It depends upon how strong the dam is built; if just strong enough to withstand the pressure of water, the quicksilver would certainly break it. The pressure of a liquid upon a vertical, rectangular dam is found by multiplying the submerged area of the dam by half its height and this by the weight of a cubic foot of the liquid.

For instance:—a dam 10 feet wide by 10 feet high, shutting in water which reaches to its top would have to withstand a pressure of $10 \times 10 \times 5 \times 62\frac{1}{2}$ lbs. = 32,150 lbs., $62\frac{1}{2}$ lbs. being taken as the weight of a cubic foot of water. Should the dam enclose quicksilver instead of water, it would have to be 13.6 times as strong, as the quicksilver weighs 13.6 times as much as water; the pressure on the same area would then be $32,150 \times 13.6 = 437,240$ lbs.

GUSTAV GUTTENBERG.

1. Would you ever use the alphabet method to teach reading?
2. Which is the best method? 3. Again, how is it that such good readers were made by the alphabet method? I have been told by a teacher that she has had children learn to read in the first reader in a month. ELLA B—

1. I would not use the alphabet method if I knew of a better one. 2. The best method for me, and I believe for the great majority, is the word method. Mark, that I say for me the word method is the best because I have used it and understand it. I have had assistants, and have seen others that produced wonderful results with the phonic method. But the great majority will turn to the word method because it is a continuation of the mother's method. She says, “There is papa; say papa.” The teacher in like manner points to the object (cat) and points to the word (cat) and the child learns that the latter represents the former. 3. While the alphabet method is wholly absurd (because spelling a word gives no clue to the sound), yet the human mind brushes away a great deal of nonsense and “gets there” in spite of absurdity. It reminds me of an experiment we tried as boys, putting a handful of corn under a flat stone. It was hard, but the corn came out all around the edges of the stone. Thus the human mind struggles to the light against many obstacles. K.

What kind of “doing” can be undertaken in a country school? The people here are somewhat interested in manual training? I have sixty-three on my list, but only forty attend with regularity. N. J. H. E. F.

That is not an easy problem, for, as I understand, you have no tools, nor benches. You will have to go with care, but do make a beginning. (1) Have some of your older boys make a case like a bureau with drawers to hold things; let each pupil go to the store and get empty envelope boxes, so that there will be a place to put small things. (2) Then start the thought in each pupil to *make something*; it is a divine instinct that finds its highest expression in edifices, furniture, etc. (3) One of the easiest to take up is paper-folding, but it is not easy for one who has not herself learned how to fold. If you take it up, do all beforehand that you will attempt to do before the pupils. (4) Paper embroidering is a pleasing occupation and within your reach. (5) Slat plaiting is another occupation. (6) Cooking may be done at home, and exhibited with the other at an exhibition held at the school-house; the pie, bread,

biscuit, and cake made should be tested by a committee. (7) Drawing—that is, of real objects—should be steadily carried on; also the filling up of squares (2 in. by 2 in.) with lines of their own invention. (8) Drawing flowers or leaves and coloring them. (9) Making things of wood—commonly called sloyd, using knife, gimlet, file and sand paper, also a small saw. (In this case you will need a common table at one corner of the room.)

As all this is out of the usual course of study pursued in school, you must go with care; first, do not neglect the regular studies. Second, have system in this doing work as much as in the book work. Do not let it be going on all the time. Have an hour for it; when that is over the other work must be prosecuted with ardor. Third, have all your work gathered and put on exhibition. Make a great day of this. Write further in a month.

I have a school of forty children, and there are five different classes. Fourteen of the children are under eight years of age, and it seems cruel to keep them in from nine to half past ten; I cannot employ them all the time inside. There is no shelter for them outside. Sullivan Co. M. E. B.

You must reduce your classes to four in some way. As to your primary class, you must be full of fertile expedients—lie awake nights not only to plan, but work during the day time. Talk with the mothers and get them to prod the fathers to have a load of rough boards go up to the school and have a shed made. You do not know what parents will do if they are convinced it is for the good of their children. Talk with the children; have a “bee,” as they call it in the country, and get a shed twelve feet square put up, with a floor. Then let the fourteen work a half hour in school and then go out under the superintendence of one of the older pupils for fifteen minutes; then in again until recess, and so on. All this shows you that the school must be a power in the district—a power that can get a mean shed if it is needed.

Photographs in the School-room.

Things that bring sidelights of interest upon the common school studies form a valuable part of the school equipment. In connection with geography, history, and literature, the use of photographs furnishes limitless entertainment and instruction. By starting a class on some suitable plan, the teacher may have collected a set or sets of photographs that bear upon some line of school-work. When it is possible, a large frame may inclose a selection of photographs to be hung upon the wall or placed on a strong easel. Albums filled with photographs that illustrate a certain grade's progress through one study, may be handed on to the succeeding classes as a valuable possession.

A visitor to Florence picked up at various shops the photographs of places and pictures referred to in “The Marble Faun,” and fastened them into his own copy. The idea became a popular feature with Italian tourists, and is now applied to other works of travel or fiction, “Ben Hur,” “Corinne,” “Romola,” “Walks in Italy,” Grimm's “Life of Michael Angelo,” and others.

In the same manner, but in his special sphere, the teacher could vividly illustrate the pages of his geography or history, by mounting photographs on thin cardboard and gluing them between the leaves, or having them re-bound into the book.

A portrait album forms an invaluable addition to many branches of study. Photographs chosen from the famous *genre* paintings of the world, when grouped in one book make an entrancing collection of pictures for reproduction stories and composition writing.

So universal has the demand for photographs become, that one house alone prints over twelve thousand subjects, giving a remarkable field for the collector of portraiture, paintings, sculpture, architecture, and scenery to chose from.

In mounting photographs, it is best to give them a few minutes dampening between clean towels that have been well wrung after a soaking in cold water. This can be done while getting ready the materials necessary to make the job successful: lead pencil, soft rag, ruler, camel's hair brush, thick flour paste.

Lay the dampened photograph on the card (which should be three inches larger on each side than the cabinet size) and measure the margin carefully to get it exactly in the middle. Make a dot at each of the four corners with the lead pencil as a guide. Turn the photograph face down on the table, and cover the back with paste, laying it on in smooth even strokes. (And as at this point lies the cause of the often-seen curled and bent cards on which photographs have been mounted, let me give the reason right here—a too liberal use of paste.)

Press the photograph on its place in the center of the card, making the corners tally with the pencil marks. Smooth it gently with the fingers. Wipe away every trace of paste that may appear on the card, and then lay the mounted photograph between newspapers and pile on a series of heavy books to act as a press for twenty-four hours. ALICE M. KELLOGG.

Catarrh oftentimes leads to consumption. Take Hood's Sarsaparilla before it is too late.

Important Events, &c.

News Summary.

- DECEMBER 12.—A Spanish loan of 50,000,000 arranged.
- DECEMBER 13.—Influenza assumes an alarming form in Russia. French newspapers warn the bishops not to endanger the peace of the country.—Gen. Barrios, the Guatemalan exile, sails from San Francisco for home, where he will become a presidential candidate.
- DECEMBER 14.—A highly protectionist tariff bill is proposed in Portugal.
- DECEMBER 15.—An alliance between Russia and Turkey urged.
- DECEMBER 16.—The Pope expresses a desire to conciliate France.
- DECEMBER 17.—The sultan of Turkey offers to settle the difficulty between Bulgaria and France.—S. B. Elkins appointed secretary of war to succeed Secretary Proctor.
- DECEMBER 18.—Plans of the New York Episcopal cathedral adopted.—A French torpedo boat strikes a rock at Toulon and sinks.
- DECEMBER 19.—The navy department preparing for possible trouble with Chile.
- DECEMBER 20.—Walt Whitman ill.

UGANDA TO BE ABANDONED.

It is announced that the British East Africa Company is about to abandon Uganda. It has been found that the country is almost impassable by reason of the network of rivers and forest-covered gorges, and that the climate is wholly unsuited to white colonization. The company, moreover, could not bear the expense of holding and governing the country, not being able to compete with the German company south of Kilima-Ndjaru, which receives aid from the home government. With the giving up of Uganda the company's part in the suppression of the slave trade in that region will be abandoned.

EMIN PASHA'S DISCOVERY.—It is reported that Emin and Stuhlman have discovered a river, the most southerly branch of the Nile, rising northwest of Ujiji, and flowing into the Albert Edward Nyanza at a point on the southeast shore.

AUSTRALIA'S NEW TARIFF.—The new tariff is a great disappointment. Wages are going down and banks are suspending. In Sydney trade is completely paralyzed. The general complaint is that, in the making up of the new tariff, the rich have comparatively escaped while the burden of the new taxation is unduly laid upon the poor.

THE NEW BRITISH ROUTE TO INDIA.—A party of marines have just made a trial trip over the Canadian Pacific road from Vancouver to Montreal, and thence by steamer to England. At the same time another party was hastening westward over the same route. The government is making the test in order to know what can be done in transporting troops eastward to India. In case of war the route through the Suez canal to that country might be cut off. In this connection we will state that a new line of fast and powerful British steamships, running between British Columbia, Hawaii, Japan, and China, has been started within a year.

FRANCE AND BULGARIA.—The French minister was recalled from Bulgaria because that government would not consent to the return of an expelled journalist. The newspaper correspondent was accused of sending out untrue stories about Bulgaria.

ERUPTION OF COLIMA.—An eruption of Colima volcano, Mexico, occurred Dec. 16, accompanied by a violent shaking of the surrounding country. The government fearing that the villages near to the volcano of Colima would share the fate of Pompeii, ordered the villagers to abandon their homes and move to places of safety. The volcano threw out great volumes of lava, ashes, and smoke, and the country for miles around was illuminated by the grand display. Strong winds carried the ashes a distance of 400 miles.

GAS AND SALT DISCOVERED.—While drilling a well near Dansville, N. Y., gas was struck at a depth of 1,000 feet. The drill was kept going and at 2,100 feet it entered a deposit of salt the bottom of which was not reached 300 feet below.

A NEW OCEAN CABLE.—Arrangements are all complete for laying the cable from Fort Jupiter, Fla., to the island of New Providence. The work will begin at the Jupiter end. The distance between the two points is 230 miles. It is expected that the cable will be in operation by the middle of January.

Of Special Interest to Pupils.

THE NUMBER OF VOLCANOES.—There are in the world about 350 volcanoes, including 30 in North America, 25 in Central America, 37 in South America, 24 in Asia and 10 in Africa. The remainder, much the larger number are on the islands. One great volcanic system exists in the Mediterranean and another extends down the West African coast. Still another system stretches along the western coast of the Americas, and a fourth along the coast of Asia from Kamtschatka to the Antarctic region. There is an eastern branch of the latter one running through the Navigator, Friendly, and Elizabeth islands, and the other through Java, Sumatra, the Nicobar and Andaman islands, almost to the coast of Burmah.

RELICS FOUND IN PALESTINE.—A cave was lately opened near Nazareth in which was found ancient glassware, vases, and bottles, beautifully ornamented with colors. This led to further search and similar relics were found in many other caves. A great bronze coin of Alexander the Great, found in one of the caverns, may indicate their date.

A CITY UNDERGROUND.—Russian newspapers say that a city has been discovered in a cave in central Asia. It is situated on the right bank of the Amou Daria, in some rocky hills near the Bokharan town of Karki. Effigies and inscriptions lead to the belief that the town was founded at least two centuries before the birth of Christ, and that it was built in a cave as a protection from savages and robbers. There are a number of streets and squares surrounded by houses two and three stories high. Urns, vases, cooking pots, and other vessels have been found in abundance.

HUNTING FOR RELICS.—A society connected with the University of Pennsylvania is about to explore the United States for relics. During the summer a number of ancient village sites in the valley of the Delaware were explored. On an island in the Delaware an implement maker's workshop was found, and in another place was 116 finely chipped knives, averaging about six inches in length. The quarry of jasper, where the Indians got their raw material, was found, and thousands of specimens of their workmanship were secured.

BIG TREES.—A cedar sixty-eight feet in circumference was lately found near Arlington, Cal. About seventy-five feet from the ground it forks into four great branches and just below these is a big knot hole. Five men climbed into the hole and explored the interior of the tree. It was found to be a mere shell, and about forty-five feet down it would afford standing-room for forty men. The tree is still green, and a remarkable feature is said to be that it is barked on the inside and the outside alike.

At Moore, Mich., an Indian tomahawk was found in the center of a saw-log 33 inches in diameter. It is six inches in length, and has a blade of roughly forged iron, about two and a half inches long. The solid timber over the head of the tomahawk was ten inches in thickness. It is estimated that it had been in the tree two centuries.

DIAMONDS IN METEORITES.—Some meteorites that have been found in Arizona will be exhibited at the World's fair. One of these weighing 633 pounds is composed principally of iron, while a smaller piece is interesting from the fact that it contains the first diamonds ever found in meteoric iron. These diamonds are black and cut polished corundum as easily as a knife might cut gypsum.

DISCOVERIES IN WESTERN AUSTRALIA.—A party have been exploring the country west of the South Australia border. They have found that it consists principally of grass covered sand-hills and sand plains with granite and other hills in groups or isolated peaks. No permanent surface water was discovered. The natives appeared friendly, but frightened. An immense green forest was found extending many miles. Neither grass, quadrupeds, nor birds were found and the camels had a very bad time of it for want of food. About 10,000 specimens of plants in a good state of preservation were brought to Esperance bay.

A SEA VOLCANO.—When the American bark *Hesper* was about seventy-five miles off the Japanese coast recently—a rumbling noise was heard and the next instant the ship was thrown on her beam ends. Great waves came tumbling toward the ship, and water rushed on deck from the stern, bow, and over the sides. It is believed that the bark was directly over a sub-marine volcano. Water flooded the deck, and the crew found it was boiling hot. The crew had to climb into the rigging, where they remained five hours, during which great blasts of hot sulphurous gas escaped from the ocean. The scalding water melted the pitch and oakum in the deck seams, necessitating repairs.

New Books.

Hezekiah Butterworth has woven into a romance called *The Log School House of the Columbia* the facts he gathered during a visit to Washington and Oregon. It was a fascinating subject with which he had to deal, including nature still unsubdued by man, the early settlers with their unconventional ways, and the Indians with their strange characters and customs. While guided by historical facts, he has filled in the details with a very pretty and interesting romance. The maiden with her violin who casts a spell over domestic broils, curbs the murderous intent of the savage, and quells the war-like spirit at the "potlatch" feast is a unique and poetical character. The school-master in his log school-house, surrounded by the urchins of the backwoods settlement and the young Indians, spending his life in this missionary work when he might have accomplished something that would have given him more money and fame, is an example of quiet heroism that is very pleasing. The author has portrayed very graphically the young chief, and successfully reproduced the Indians' peculiar way of speaking. He has not forgotten those brave men through whose exertions we possess these Northwestern states. Most of the facts concerning them are appended in notes. The book is clearly printed, with wide margins, on thick, smooth paper, and has several full-page illustrations, the pages being five and one-half by seven and three-fourths inches. It is bound in blue cloth, with lettering and border and other decorations in gilt. (D. Appleton & Co., New York.)

Osmond Airy, an English inspector of schools and the author of several historical works, has published a *Text-Book of English History From the Earliest Times*, for colleges and schools. The author confines himself strictly to the political history and development of the English people and in the limits of the 540 pages of an 8vo. volume compresses the main points to be noticed concerning Britain and her colonies. He has divided the history into ten books treating of so many periods, an arrangement that greatly aids the memory. The account of the Roman and Saxon periods is sufficiently extended for all school-room purposes. The principal interest for most readers begins with the Norman conquest when England, united, was prepared to march forward to those grand achievements that have marked the past few centuries. Therefore this history is detailed minutely. For us, what the author calls "The Era of Reform" has the most interest. It is distinguished by such radical changes as the alteration of the labor laws and the reform of the criminal code, the adoption of free-trade, Catholic emancipation, abolition of the slave trade, municipal reform, penny postage, repeal of the corn laws, etc. The volume is provided with indented headings throughout the pages, numerous foot-notes, and maps illustrating the history at important periods. It is an excellent book for the student who wants an unbiased and moderately detailed account of English history. (Longmans, Green & Co., London and New York. \$1.50.)

The trouble with many text-books is, there is too much of them—they give too many details. If the student can fix the main points of a science he has accomplished a great result; he can fill in the details at leisure. The purpose of Prof. J. H. Gilmore, of the University of Rochester, in his *Outlines of Rhetoric* has been to give a brief, simple, but complete outline of the art, embodying those statements with regard to which most rhetorical instructors would be agreed, and leaving wide room for amplification and illustration; also such references to the best ancient and modern authorities as would facilitate his work. He has tried to reduce the task of memorizing to the *minimum* and to raise the supply of material for future study to the *maximum*. The author has set forth the relation of rhetoric to psychology, grammar, and logic and treated the parts of his subject in the natural order. He has produced a good, practical text-book for the use of schools, and the study of rhetoric, with the aid of the directions and suggestions in this volume, ought to become a very fascinating one. (Leach, Shewell & Sanborn, Boston and New York. 90 cents.)

Praise of *St. Nicholas* is scarcely necessary, for it would be hard to find one of our young friends in any part of the country who does not know it by reputation, while those who have been delighted by its bright pages are numbered by the hundred thousand. The illustrations and matter fit grave or gay moods, furnishing an unending amount of entertainment. We have just received Volume XVIII. of this standard magazine for young people, bound in two volumes. It contains 968 pages, 800 pictures, including 26 full page, and many others of large size. Its list of contributors comprises many of the best known magazine writers, among whom are Noah Brooks, Joaquin Miller, Charles Dudley Warner, Mary Mapes Dodge, Andrew Lang, and others. The variety is wonderful. Serials, poems, sketches, travel, and articles of general interest furnish reading for all tastes. The volumes are bound in red cloth with a very handsome front cover and back stamped with leaves, vines, flowers, and lettering in gilt and black. No holiday books would yield more pleasure or profit to the young people than

St. Nicholas. (The Century Co., New York; T. Fisher Unwin, London.)

A recently published volume (containing four double numbers) in the Humboldt library is *Mental Suggestion*, by Dr. J. Ochorowicz. The author of this treatise claims that hypnotism and animal magnetism, though they have certain superficial resemblances, are radically different from each other. His title—"Mental Suggestions" indicates the difference he claims. Of the capacity and the experience of the author there can be no question; neither can there be any doubt as to the value of his book. The subject is one of great importance to the mind student, and in a direction concerning which but little is known. The author has studied all the literature of hypnotism and animal magnetism, and his book contains an enormous quantity of material nowhere else to be found in so compact a form and at so cheap a price. The Humboldt Publishing Co., 19 Astor place, New York. \$1.20.)

A recent volume in the University Extension Manual series is the *Use and Abuse of Money*, by W. Cunningham, D. D., university lecturer at Cambridge. The book is for those who are already somewhat acquainted with the subject, and it is intended to help them think on topics about which everybody talks. These topics are various and the opinions are conflicting, but the student will nevertheless receive great benefit from their investigation. According to the author, the sketch "simply follows out some of the suggestions made by Mills with a view of raising the question, whether a full recognition of the human element in economics may not be the best means of attaining to clear definitions of economic terms, and to the distinct statement and thorough discussion of fundamental economic problems?" The book is divided into three parts treating of social problems, practical questions, and personal duty. The student will be aided greatly by the excellent syllabus, including the main points of the various chapters. (Charles Scribner's Sons, New York. \$1.00 net.)

All children love flowers. It is as natural as it is for them to love pure air and sunshine, and the study of botany should be one of the most fascinating in the whole school course. It is only when the dry bones of the science merely are presented that it becomes distasteful. Fanny D. Bergen her little book, *Glimpses of the Plant World*, has included much of the poetry of which the subject is capable in language that the child can understand. What is a plant? What is mould? frog-spit, a garden in the sea, and the walking fern, are some of the attractive topics treated. The illustrations are numerous and beautiful. (Lee & Shepard, Boston. 75 cents.)

It is not often that a queen enters the lists of authorship. When, therefore, a royal personage writes a book it excites more than ordinary interest. But even a queen must have something more than a title to recommend her to the public. Carmen Sylva, the queen of Roumania, has given several books to the world, the latest one published in this country being *Edleen Vaughan; or, Paths of Peril*. The scene of the story is in London and Wales, and the author delineates English character in her lively and intensely poetic style. The story is an entertaining one and will increase the reputation of Carmen Sylva as a talented and graceful writer. (The Cassell Publishing Co., New York.)

One of the most delightful little books for children's reading, published recently, is *St. Ireland*, consisting of talks with young people about wonders of the heavens, by Sir Robert Stawell Ball, F. R. S., royal astronomer of Ireland. The author possesses in an eminent degree the faculty of using common illustrations to explain uncommon things, and thereby brings the main facts of this grand science down to the comprehension of those who have had no previous knowledge of astronomy. The style is clearness and simplicity itself and the diagrams are beautiful. Having dipped into the wonders of the heavens in this volume the reader will be likely to pursue this fascinating study further. The ancient spelling of such words as "favour," "labour," etc., in the book looks strange to American eyes. (Ginn & Co., Boston. \$1.10.)

A bunch of poetic flowers culled from the works of Lowell is given to the public in a volume of *Odes, Lyrics, and Sonnets*. The book opens with that grand poem, the "Commemoration Ode." The other long poems are "Agassiz," "Under the Old Elm," and "Endymion." There are many short ones also that have sung their way into the hearts of his countrymen. The book is in holiday binding of cream colored cloth lined around the sides with green, and having Lowell's name inside of a laurel wreath in the same color in the center of the front cover. It also has gilt lettering on the back, gilt top and rough, uncut edges. (Houghton, Mifflin & Co., Boston and New York. \$1.00.)

All who are interested in knowing something of the lives of the educational masters will hail the appearance of the little manual *Comenius*, being No. 17 of the Teachers' Manual series. Its price, 13 cents by mail, puts it in the reach of every teacher. It is a part fulfillment of a plan of the publishers to issue books on education at a cheap rate. This volume is from the pen of Prof. O. H.

Lang an enthusiastic student of education. From a perusal of these pages one gets an idea why Comenius is held in such high repute by educators. In 1892 the three hundredth birthday is to be celebrated and this is a sort of *avant courier* of that day. (E. L. Kellogg & Co., New York & Chicago.)

The second volume in the Information Reader series describes *Every-Day Occupations*. It was written by H. Warren Clifford, S. D., who has exercised much discrimination in regard to the choice of subjects and who has secured the necessary simplicity in the style. These volumes remind one that there has been a vast change in the school instruction in the past few years. Formerly when the pupil went out of school after his dry and uninteresting drill on the three R's, the world was entirely strange to him. He found that his schooling had not been aimed to aid him to understand the problems before him. Such reading books as these will help to open up that vast world of activity in which the pupil is soon to take part. The children will read with eagerness the chapters on silk, furs, seals, tanning, houses and tools, ships, our new navy, and others. The book should be taken for just what it is—an attempt to describe some industrial processes in such a way that pupils will read and enjoy it. The reader furnishes just the matter live teachers have been looking for; they will be glad to get it in such admirable shape. The illustrations are numerous and excellent. (School Supply Co., Boston.)

We have just received a large number of business forms to be used in school. They include facsimiles of notes, checks, drafts, certificates of deposit, bills, bonds, letters, etc. Some of them are left blank to be filled in by the pupil and others are filled in. The designs are handsome and the paper of excellent quality. As showing the forms of commercial paper used in business they are invaluable. We think that teachers who have once used them will not want to do without them. (Milton Bradley Co., Springfield, Mass.)

Miss Marguerite Bouvet who gained herself a reputation as a writer for children by her story, "Sweet William," has just published another juvenile book, *Marjorie's Love Story*. Marjorie is a devoted sister who lavishes on her more beautiful, though selfish and imperious brother, all the wealth of her boundless love. The contrast between the characters of the two children is drawn with much skill. The book is beautifully illustrated by Miss H. M. Armstrong. (A. C. McClurg & Co., Chicago. \$1.25.)

A new educational journal is announced to be published by Messrs. Ginn & Co., to be devoted to secondary and higher education. The editor is to be Supt. Ray Greene Huling, of New Bedford. It hopes to become a valued medium of intercommunication among instructors in high schools, academies, seminaries, end colleges, and a favored vehicle for the presentation of the best American thought on secondary and collegiate education.

The attention of the world has been called to prison reform by some radical departures from the old methods at the Elmira (N. Y.) State Reformatory. A knowledge of the excellent work there has been disseminated by little volumes on this subject of which we have one before us, *Papers in Penology*. It contains papers on the prisons of Great Britain, leading principles of modern prison science, the philosophy of crime and punishment, criminal anthropology, New York's prison law, Prison labor systems, and the Elmira Reformatory of to-day, by experts in the science. (N. Y. S. Reformatory Press.)

A little rhymed musical dialogue, full of bright speeches and action, written by Abby Morton Diaz, has just been published. It is entitled *Mother Goose's Christmas Party*. Full directions are

given for dressing and stage setting. It would make a pleasing entertainment for a school on Friday afternoon, or could be used as a part of an evening entertainment. (Searles & Gorton, Chicago. 50 cents.)

Rose and Lavender is a juvenile story treating of home life in a way that will interest the young people, written by the author of *Miss Toosey's Mission*, "Laddie," "Tip-Cat," and other stories. It will make good holiday reading for the children. (Roberts Brothers, Boston. \$1.00.)

S. W. Straub & Co., 243 State street, Chicago, have just published a beautiful Christmas exercise for Sunday-schools, called *Christmas Joy!* Price, 5 cents. It consists of appropriate Scripture readings, charming songs, recitations, etc.; all very appropriate and interesting.

Magazines.

—In *Babyhood* for December there are medical articles, by well-known authorities, on "Biliousness in Children," "Nursery Ventilation and Warming" and "The Care of Delicate Children."

—The *Ladies' Home Journal* has a strong and attractive prospectus for 1892. Its list of writers for the coming year includes Mrs. Gladstone, Mr. Howells, Mrs. Burton Harrison, Mrs. Admiral Dahlgren, Mrs. Beecher, Mrs. McKee, Palmer Gox, Sarah Orne Jewett, and others.

—Ginn & Co. announce that the January *School and College*, edited by Ray Greene Huling, will contain among other articles the following: "Some of the Next Steps Forward in Education," by Pres. E. Benjamin Andrews; "Secondary Education in Census Years," by James H. Blodgett; "The Greek Method of Performing Arithmetical Operations," by John Tetlow; "English in Secondary Schools," by Francis B. Gummere; "When Should the Study of Philosophy Begin?" by B. C. Burt.

—Prof. A. D. Morse, of Amherst college, opens the *Political Science Quarterly* for December with a timely article on "The Democratic Party," its historical origin and its present tasks. Charles B. Spahr opposes vigorously Mr. George's single tax scheme. M. Ostrogovski presents a careful and exhaustive study of Woman Suffrage in Local Self-Government; and Dr. Fredric "Bancroft, with recent publications as his text, writes sympathetically of "Lincoln and Seward" and critically of "Their Latest Biographers."

—The December number of the *Educational Review* completes the second volume of that journal. Pres. Seth Low has an article on "James Russell Lowell" as an educator, and Prof. Joseph Jastrow a psychological study of the processes of "Memory and Association." "College Athletics and Heart Disease" is treated by Dr. D. A. Sargent, of Harvard. Among the other contributors are Dr. J. G. Fitch, Col. Parker, Supt. T. M. Balliet, and Prof. S. S. Laurie.

—The attractive pages of the December number of the *Home-Maker* abounds in a variety of interesting subjects for the modern woman. A fine frontispiece portrait of Sir Edwin Arnold is followed by choice illustrations of song and story from popular authors, while the deeper note of the editor (Jennie June) is recognized all through this home symphony for woman. The reader is seated at once beside the editorial "Arm Chair" in affectional sympathy, and entertained with glimpses of the home life of celebrities; shown a little of life and customs in other lands; taught how to mingle the beautiful with the useful in the art of home-making; receives some valuable hints in tasteful dressing; and is finally invited into the "Cycle Department" and taken through the rounds of the social pleasures and intellectual activities of "Club" life among women. This magazine is devoted to the true interests of intelligent womanhood. It is published by the Home-Maker Publishing Co., Union Square, New York.

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in Texas, by Galveston, Sherman, San Antonio, Harris County, etc.; in Illinois, by Springfield, Decatur, Joliet, etc.; in Michigan, by Detroit, East Saginaw, etc.; in Minnesota, by St. Paul, Duluth, etc.; in Miss 91, by the state and eighteen colleges and academies; in Kansas, by over fifty cities and towns; in Nebraska, by Buffalo, Douglas, Lancaster, Otoe, Seward, and Washington Counties and seventy-five cities and towns not included in these; by the States of Missouri, Washington, South Carolina, and West Virginia, and by the Territory of New Mexico.

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Publishers' Desk.

CLEVELAND.

The Cleveland School Furniture Co. is booming. They manufacture a veneered desk that gives great satisfaction. Mr. Speith, the president, and manager is now in New York making arrangements for a New York representative. They are also making arrangements to move their plant to a much more desirable location—it is in Cleveland, however, though Michigan made great inducements for them to desert their present city. Mr. Speith's description of the new quarters is very interesting.

The Favorite Desk & Seating Co. are making preparations for a big business next summer. The last season's work was highly satisfactory and they hope this year to eclipse even that.

ST. PAUL.

Who has not heard of the Tadella Alloyed Zink pens? The Co. are located at St. Paul, Minn., and have been pushing this branch of their business very vigorously. "Smoother than gold, more durable than pure steel," is their watchword. At present they have two stores, but they hope to get into their magnificent new building by January first. For fear of frightening some of our magazine editors, we will refrain from saying just how many thousand gross of pens they have sold this year, but they seem to be very much pleased with their success.

MINNEAPOLIS.

A visitor to the office of the Minneapolis School Furniture Co. will find it quite a little journey to get there, not so bad as it was, however, with the horse cars; now the electric carries you through quickly. The pleasant reception that Mr. Murphy will give you makes up for the time spent in getting there. Though conservative in their way of doing business they furnish a large number of schools with desks and churches with furniture. Their school desk is a very good one and has given thorough satisfaction wherever used.

CINCINNATI.

C. B. Ruggles & Co., the Teachers' Agency, report a fine fall business but regret that they had a large number of positions they were unable to fill, scarcity of superior teachers being the rule.

More bells are made in Cincinnati than any other city in the Union. The Van Duzen & Tift Co., makers of the Buckeye Bells, and the Cincinnati Bell Foundry, who make the Blymer Bells, are very busy. Both houses are making and selling a great number of fine-toned bells.

CHICAGO.

When the writer stepped into the optical store of L. Mannassie on Madison street on the 18th of November the thermometer registered 10° above 0°, the first cold wave of the season. The instruments of this firm are well known and appreciated. The daily papers quote them as authority on questions of weather and temperature. The house also makes optical instruments of all kinds, magic lanterns, etc.

Jas. Kirk & Co., the manufacturers of "Shandon Bells" perfume, are doing a large business. At present they are devoting considerable attention to the bounding West, but they say that the East will hear from them very soon.

J. P. Cameron & Co., 182 Monroe street, make a line of school Records and Registers that are very popular. They are not only used in the West, but Eastern schools favor them largely.

Mr. Haines, president of the Central School Supply Co., 175 5th Avenue, showed the writer a number of photographs of their new reading chart. He intends having them reproduced in half-tone and will use them in his circulars. The firm has many advance orders and their chart seems likely to be a big success. THE JOURNAL's readers will hear more of it later.

The National Library Association on Wabash Avenue is the largest business of its kind in the country. They furnish to their subscribers almost any article wanted. Mr. Borland, the president, showed some advance sheets of a new catalogue which will contain a vast amount of information regarding their business and the goods they sell. The prices are ridiculously low, but of course to get them it is necessary to become a member.

Mr. Robbins, of the National School Furnishing Co., on Wabash Avenue reports fine business and new goods. They complimented THE JOURNAL and THE INSTITUTE on their handsome appearance and new dress. In fact everyone had a good word for the paper and they think we have made a big step forward.

Wabash Avenue is the street for Book and School Supply houses. At No. 182 Mr. W. A. Olmstead holds forth. Mr. Olmstead is an Eastern man and was a classmate of Dr. Jerome Allen of THE JOURNAL. Mr. Olmstead has by hard work made his business a success. He has a great many specialties and supplies the Chicago schools with the majority of their material.

Right across the way at 185 is the store of Mr. A. Flanagan, dealer in teachers' books and school helps. There is not a new book or help published that he fails to get. In fact, whenever a call arises for an out-of-the-way teachers' book the stereotyped phrase is heard: "Send to Flanagan." Business has grown so rapidly that Mr. Flanagan talks of moving to even larger quarters.

One of the finest buildings in Chicago is the Rand, McNally building on Adams street. Their office is a maze of desks devoted to the different departments of their immense business. We had a pleasant chat with Mr. Jas. McNally in reference to their new Columbian school maps. Their railroad maps and guides are an everyday necessity but their excellent series of school maps are not so well known. No expense has been spared to make them absolutely correct and up to date. They are American made maps for American schools and American scholars.

C. L. Reckett, in the Opera House building, is the diploma man of Chicago. His work is of the finest and most artistic kind. He has recently finished a testimonial that was presented to Mr. Gage of the World's fair. The price was \$1,000.

The Chicago Cottage Organ Co.'s business has increased so rapidly that they are unable to fill orders. Many Eastern teachers will remember the Cable brothers who so ably represented A. S. Barnes & Co., several years ago. They are the proprietors of the Cottage Organs.

Robert Clarke & Co.'s fine store on Fourth street is continually thronged with buyers. Undoubtedly the tasteful display of books in the window has much to do with this, for a prettier assortment is seldom seen. In the wholesale department Mr. Bonney says the sale of their phonographic books has been a great success.



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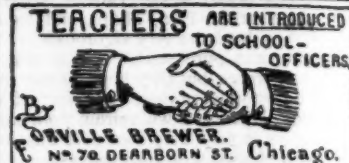
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The Publishers' Desk.

CHICAGO.

The Edison mimeograph is well known among schools. In fact, it is hard to see how a school can well get along without one. It will pay for itself in a short time with the saving of labor. It is made by A. B. Dick Co.

Col. Turner, of the Western Publishing Co., was in his office on Wabash Avenue opposite the Auditorium, and though very busy, told the writer they were making large sales with their relief maps, a set of which was shown. They were superb; any school might be proud of possessing them. The Pollard Synthetic system of reading he said is an assured success, the work of Mrs. Pollard in Pennsylvania, where she is at present demonstrating her system, is resulting in numerous orders. A new first reader has just been published.

On hearing the name of Gunther you think of Chicago candy. But when you reach Chicago and go to Gunther's for your candy—as of course you will—don't leave until you have taken a trip up stairs to his museum. He has a superb historical collection. The Washington relics are specially fine among which is the famous portrait by Peale considered the best likeness ever painted of the father of his country. An afternoon can be profitably and sweetly spent there.

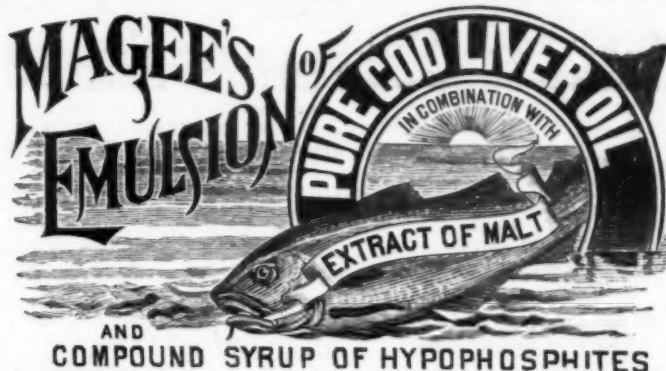
The McIntosh Battery Co., on Wabash Avenue, has its window full of new electrical apparatus that seems to interest passers-by greatly for there is always some one looking in and going in. The company is thoroughly progressive especially in electrical matters. Their store is very large and commodious showing their goods in fine style.

Thos. Kane & Co. is one of the largest and most progressive houses in Chicago. They are manufacturers, jobbers, and retailers. On their lower floor may be found hundreds of bicycles of all kinds; the next floor is devoted to school and office furniture—an endless variety. Mr. Morgan, the manager, hints at something in the way of a novelty for this coming year, which will be of great interest to teachers. What it is he doesn't disclose just yet.

De Haven & Co. are making a new Iron standard desk. They have heretofore only made one of wood. Their samples show a handsome piece of furniture and they will be heard from this coming season.

The American Desk and Seating Co. on Wabash Avenue Chicago express themselves as entirely satisfied with business, both present and prospective. Their school desk trade has been profitable and their new improvements in office desks is attracting wide attention. Their latest effort in desk-making is a magnificent specimen of the wood-worker's art. The interior arrangements of this desk are perfect. Everything is close at hand. There are pigeon holes with file boxes, letter-cases, and bill-files, a swinging ink-rack with three wells, and many other improvements. The finish is as smooth as that of a piano and all the metal trimmings are of bronze. That the desk will be a success is proven by their orders. Mr. H. W. Dickerman who kindly showed the writer around was very enthusiastic over this achievement and says it is the finest desk made.

M. Oovarov, a Moscow scientist, has discovered that when lightning strikes in a forest the white poplar (*populus alba*) is the first to attract it. He came to the conclusion that this tree can be used as a natural lightning rod, and he submitted a memorial to the minister of the interior advocating that the planting of a white poplar before every house in a village be made obligatory upon the peasants to prevent fire by lightning.



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